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What rules govern international waters?

Can Iran legally restrict transit through the Strait of Hormuz? Is the U.S. blockade of the strait lawful? What is the legal position on interceptions? And in cases such as this, which organisation steps in and how? What can happen next?

M. Kalyanaraman

The story so far:

In an escalation of the conflict on the Strait of Hormuz, Iran has attacked three ships, detaining two on its territorial waters. This is allegedly in response to U.S. forces seizing two ships, including a very large crude carrier linked to Iran, between Sri Lanka and Indonesia on the high seas.

What was the situation at Strait of Hormuz when war broke out?

Within a day of the war breaking out on February 28, transits across the Strait of Hormuz dwindled from some 100 vessels on a typical day to a handful. Iran put in place a system of allowing transits based on geopolitical considerations and a toll fee that media reports suggested ran to more than a million dollars per ship. India was among the biggest beneficiaries of the system, with Iran allowing some 10 Indian flagged ships and many foreign flagged ships carrying India's oil and gas supplies to pass.

The Indian government has said it has not paid any toll and was only exercising free navigation rights given to merchant ships as per international law and practice. Hundreds of Iranian vessels and vessels linked to Iran have crossed the strait meanwhile.

What did the U.S. do?

In talks with the U.S., Iran brought the Strait of Hormuz on the negotiating table, demanding the right to regulate and control the passage of ships and to charge a toll fee, partly to rebuild its economy.

Following the collapse of the peace talks on April 12, U.S. President Donald Trump announced a blockade of Iranian ships. This was less a physical blockade using naval ships and

The seas are a shared global commons that must be collectively managed. Freedom of navigation, especially for merchant ships, is to be upheld, with minimal exceptions

more a declaration of control exercised through measures such as radio warnings. The aim was partly to dismantle the regime Iran had put in place to control ship transits, and to deter Iranian ships that had until then navigated freely through the strait. Dozens of Iranian ships are reported to have been turned back.

On April 19-20, the U.S. intercepted, disabled and boarded the ship container *Touska*, an Iranian-owned and managed container ship with a cargo-carrying capacity of more than 60,000 tonnes. The U.S. said it suspects the ship was carrying cargo that could be used for military purposes.

At around the same time, U.S. forces intercepted *Tijani*, a very large crude carrier that can carry 2 million barrels of oil, between Sri Lanka and Indonesia in international waters. The U.S. says the ship was involved in the Iranian oil trade. Both vessels are in the custody of U.S. armed forces. These actions are part of efforts to cut off Iran's income sources.

How has Iran reacted?

On April 16, Mr. Trump said the strait was fully open. However, with the U.S. blockade of Iranian ships in full swing, nearly a dozen India-flagged and foreign ships bound for India lined up to transit the strait on April 17-18.

The Islamic Revolutionary Guard Corps Navy fired on two Indian-flagged ships – *Sanmar Herald* and *Jag Arnav* – and ordered them to go back. Along with these two, all ships barring one returned to the Persian Gulf. India lodged a protest with the Iranian Ambassador over this.

On April 23, Iran captured *Francesca* and *Epaminondas*, two container ships seeking to exit the strait, and fired at a third one, as retaliation against the U.S. blockade of Iranian ports and the capture of Iranian ships. Iran had said the two vessels had "endangered maritime security by operating without the necessary permits and tampering with navigation systems." The two vessels are in Iran's custody.

A third ship, *Euphoria*, with Indian crew, which was shot at, is reportedly not in Iranian custody. Iran has said unless the U.S. blockade is lifted, the strait cannot be reopened for traffic.

What is the legal position on such interceptions?

Straits have long been a focus of conflict or provided leverage to belligerent parties during wars. Various treaties and agreements were signed, especially in the 20th century, establishing rights and duties for many naturally forming straits, such as across Turkey and Egypt and the Tiran Island near the Gulf of Aqaba.

To create a comprehensive legal framework

for the world's waters, the United Nations Convention on the Law of the Sea (UNCLOS) was negotiated over nearly two decades and came into force in 1994. Its core principle is that the seas are a shared global commons that must be collectively managed. Freedom of navigation, especially for merchant ships, is to be upheld, with minimal exceptions. The high seas fall outside the jurisdiction of any single nation.

The U.S. imposes sanctions on government agencies and companies linked to countries it is in conflict with, as a form of economic warfare. These sanctions restrict access to funds and make business transactions difficult. However, they are based on U.S. law, not international law, and are not authorised by the United Nations. The U.S. has also intercepted ships trading in Venezuelan oil and carrying oil to Cuba.

International law upholds unfettered freedom of navigation of merchant ships on the high seas. Exceptions include hot pursuit of vessels that have committed crimes in territorial waters, explicit authorisation by the UN Security Council, vessels without nationality, or cases where the flag state consents to interception. At times, the U.S. has cited the latter grounds.

Outside the high seas, such as in territorial waters, "innocent" passage rights apply to merchant ships and even warships. "Innocent" means the ship does not pose a threat to the nation.

Does Iran have any rights over the Strait of Hormuz?

The strait is an international passage. But at its narrowest point, the territorial waters of the two border states – Iran and Oman – intersect, which means there is no high seas or exclusive economic zone there. As per UNCLOS, instead of the freedom of navigation accorded in the high seas, the concept of "transit" is applied.

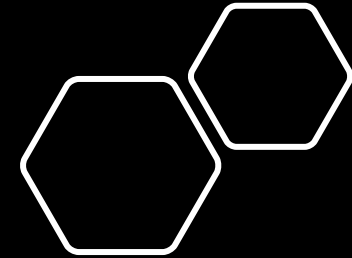
As per UNCLOS, transit recognises free, unhindered passage to foreign ships. Iran cannot regulate ship traffic nor deny permission to merchant ships seeking to transit. But a few restrictions are allowed: ships must move continuously and without delay; designated traffic routes, recently revised by Iran, must be followed; ships should enter solely for the purpose of transiting the strait; and vessels must not load or unload goods in violation of the laws of Iran or Oman.

What can happen next?

The UN agency that could potentially resolve the issue is the International Maritime Organization (IMO). The IMO has indicated it is working with Iran to resolve the issue. It has proposed a plan to facilitate the evacuation of ships while upholding freedom of navigation. The IMO has decreed tolls and permits. The IMO Council had passed a resolution severely condemning Iran for attacks on commercial vessels and seeking to choke the Strait of Hormuz, but it has not been critical of the U.S.'s actions and blockade.



U.S. forces patrolling the Arabian Sea near *Touska*, an Iranian-flagged cargo ship, on April 20. AFP



- **Key Terms and Explanations**

- **International Waters (The High Seas):** Waters beyond the 200-nautical-mile Exclusive Economic Zone (EEZ) of any nation. They are considered "global commons," meaning no state has sovereignty over them.
- **UNCLOS (United Nations Convention on the Law of the Sea):** Often called the "Constitution of the Oceans," this 1982 treaty defines the rights and responsibilities of nations regarding their use of the world's oceans.
- **Territorial Waters:** A belt of coastal waters extending at most 12 nautical miles from the baseline of a coastal state. The state has full sovereignty here, subject to the right of "innocent passage."
- **Innocent Passage:** The right of foreign vessels to pass through a state's territorial waters as long as it is not prejudicial to the peace, good order, or security of the coastal state.
- **Transit Passage:** A more liberal regime than innocent passage, applying specifically to international straits. It allows for continuous and expeditious transit for the purpose of navigating the strait between one part of the high seas/EEZ and another. Unlike innocent passage, coastal states cannot suspend transit passage.
- **Freedom of Navigation (FON):** A principle of international law that ships flagged under any state shall not suffer interference from other states, apart from exceptions provided for in international law.
- **Choke Point:** A narrow channel along widely used global sea routes, such as the Strait of Hormuz or the Strait of Malacca, critical for global energy security.

- **Main Arguments and Substantive Parts**

- The core tension lies in the **clash between unilateral domestic policy (sanctions/blockades) and multilateral international law (UNCLOS).**
- **The Right to Regulate vs. Freedom of Navigation:** Iran's attempt to impose tolls and regulate traffic is framed as a matter of economic recovery and maritime security. However, international law suggests that in "international straits," coastal states cannot deny or hamper the right of transit passage.
- **Legality of Interceptions:** Interceptions on the high seas are generally illegal unless a vessel is without nationality, engaged in piracy/slave trade, or if the flag state consents. The article highlights that U.S. interceptions, while citing "military use" of cargo, often rely on domestic U.S. law rather than UNCLOS mandates.
- **The Role of International Organizations:** The International Maritime Organization (IMO) acts as the mediator. Its stance emphasizes that while security is paramount, "choking" a strait or imposing arbitrary tolls undermines the global economic fabric.

- **Historical Evolution of the Issue**

- **Pre-1958:** Customary international law prevailed, with a "3-mile limit" based on the reach of a shore-based cannon.
- **1958-1960 (UNCLOS I & II):** Initial attempts to codify sea laws; issues like the breadth of territorial seas remained unresolved.
- **The Cold War Era:** Growing naval ambitions of the US and USSR necessitated a clear "transit passage" rule to ensure nuclear submarines could pass through straits submerged without notifying coastal states.
- **1982 (UNCLOS III):** The current framework was adopted. Notably, the U.S. has not ratified UNCLOS but treats its navigation provisions as customary international law.
- **Post-2000s Geopolitics:** The "weaponization" of maritime choke points has increased as trade-dependent nations (like India and China) rely more on these routes for energy, making them flashpoints for regional conflicts (e.g., Iran-U.S. tensions).

- **Way Forward**

- **Universal Ratification:** Encouraging all major powers (including the U.S.) to formally ratify UNCLOS to harmonize domestic and international laws.
- **IMO Empowerment:** Strengthening the International Maritime Organization's mandate to arbitrate disputes before they escalate to naval confrontations.
- **Neutral Escorts:** In times of high tension, using neutral UN-flagged naval escorts for merchant vessels to prevent unilateral seizures.
- **India's Role:** As a major stakeholder in the Indian Ocean, India should promote a "SAGAR" (Security and Growth for All in the Region) approach, advocating for a rules-based order.

- **Previous Years' Questions (PYQs)**

- **UPSC Mains 2022 (GS-2):** "The United Nations Convention on the Law of the Sea (UNCLOS) provides a comprehensive framework for ocean governance. In this context, discuss the challenges in its implementation."
- **UPSC Mains 2017 (GS-2):** "What is the importance of the Strait of Hormuz to India's energy security?"
- **UPSC Prelims 2021:** Question regarding the definition of "Exclusive Economic Zone" and the jurisdiction of coastal states.

MODULE 1: THE STRAIT OF HORMUZ: A GEOPOLITICAL CASE STUDY

IRAN

U.S. Interceptions of 'Youska' & 'Tifan' (citing military cargo, domestic law)

Iran Firing on Indian Ships ('Sanmar Herald' & 'Jag Arnav')

UAE

Iran's Proposed Tolls & Restrictions

Arabian Sea

OMAN

Iran's Proposed Tolls in m low analases on mvigations

UN Security Council / IMO roles (limited condemnation vs. rules-based order mediation)



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UPSC CSE: GLOBAL MARITIME LAW - UNPACKING UNCLOS & THE STRAIT OF HORMUZ CASE STUDY

MODULE 3: THE GREAT LEGAL DEBATE: GROTIAN VS. SELDEN

GROTIUS <i>Mare Liberum</i> - Free Seas	SELDEN <i>Mare Clausum</i> - Closed Seas
<ul style="list-style-type: none"> Global Commons Freedom of Navigation Multilateralism (UNCLOS) 	<ul style="list-style-type: none"> Coastal State Rights National Sovereignty Bilateral actions National Security concerns
<p>Unhindered shipping lanes</p>	<p>Domestic policy (sanctions, blockades) conflicts with international law (UNCLOS)</p>

MODULE 5: MULTI-DIMENSIONAL ANALYSIS

<p>SOCIAL</p> <p>Trade Disruption Cost of Living Commodity Supplies</p>	<p>POLITICAL</p> <p>Geopolitical Lever Nuclear Deals Regional Conflict</p>
<p>LEGAL</p> <p>Fragmentation Domestic Sanctions vs. International Law</p>	<p>ETHICAL</p> <p>Right vs. Might impact on third parties</p>
<p>INTERNATIONAL</p> <p>UN/IMO Efficacy Rules-based Order</p>	<p>ECONOMIC</p> <p>Energy Security Global Prices Systemic Risk</p>

MODULE 2: KEY TERMS & UNCLOS MARITIME ZONES

HIGH SEAS (GLOBAL COMMONS)	UNCLOS (UN CONVENTION ON LAW OF THE SEA)	FREEDOM OF NAVIGATION (FON)
TERRITORIAL WATERS (12 NM)	Sovereignty vs International rights	TERRITORIAL WATERS (12 NM)
MULTITORIAL ZONE (TEM)	Exclusive rights Sovereignty International rights	INNOCENT PASSAGE
EXCLUSIVE ECONOMIC ZONE (EEZ)	INNOCENT PASSAGE (sovereignty/rights)	TRANSIT PASSAGE (international rights)
		MARITIME CHOKER POINT (sovereignty/rights)

MODULE 4: TIMELINE: EVOLUTION OF INTERNATIONAL WATER RULES



MODULE 7: MODEL ANSWER STRUCTURE & THE WAY FORWARD

<p>A typical 250-word answer (e.g., for a question on UNCLOS limitations).</p> <ul style="list-style-type: none"> Intro Body 1: significance of UNCLOS Body 2: signatons in undetermination Body 2: limitations in unilateral actions and revulsion Conclusion 	<p>THE WAY FORWARD</p> <ol style="list-style-type: none"> Universal Ratification of UNCLOS IMO Empowerment (Mandate enforcement) Neutral Escorts in Straits (UN-flagged) India's SAGAR (Security & Growth) Approach
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MODULE 6: UPSC SYLLABUS & NCERT LINKS

UPSC CSE Papers	NCERT Class	NCERT
GS-2: International Relations	Class 11 Geography: Oceast	Oceans
GS-3: Security, Infrastructure	Class 12 Pol Sci: Oceast	Global Commons
GS-4: Ethics	Class 10 Geography: Resources	
Essay		

U.S. envoys not to travel to Pakistan, says Trump

'Too much work,' says the U.S. President on talks as Iranian FM wraps up Islamabad visit

Araghchi meets Pakistan's leaders and thanks them for their efforts to mediate end to the war

Pakistan stresses importance of dialogue, says it would act as a bridge to 'convey' Iran proposals

Agence France-Presse
ISLAMABAD/TEHRAN

U.S. President Donald Trump said on Saturday he had ordered his envoys not to travel to Pakistan to continue talks with Iranian officials on ending the war.

"I just cancelled the trip of my representatives going to Islamabad, Pakistan, to meet with the Iranians. Too much time wasted on travelling, too much work! Besides, there is tremendous infighting and confusion within their "leadership." Nobody knows who is in charge, including them. Also, we have all the cards, they have none! If they want to talk, all they have to do is call!", Mr. Trump wrote on his social media platform Truth Social.

The decision came as Iran's Foreign Minister Ab-

bas Araghchi wrapped up a visit to Islamabad.

Mr. Araghchi met Field Marshal Asim Munir, Pakistan's Army chief and a key figure in the mediation effort, as well as Prime Minister Shehbaz Sharif and Foreign Minister Ishaq Dar.

'Principled positions'

Mr. Araghchi, according to an Iranian statement, thanked Pakistan for its efforts but "explained our country's principled positions regarding the latest developments related to the ceasefire and the complete end of the imposed war against Iran".

Mr. Dar posted on social media that the meeting with the Iranian delegation lasted around two hours and Pakistan emphasised "the importance of dialogue and diplomacy".

Iranian state media later reported that Mr. Araghchi



Peace mission: Iran Foreign Minister Abbas Araghchi meeting Pakistan Army Chief Asim Munir in Islamabad on Saturday. AP

had left Islamabad. It said Islamabad would serve as a bridge to "convey" Iranian proposals.

An Iranian spokesperson said the Foreign Minister would now travel to Oman and Russia to discuss efforts to end the war, which was launched against Iran by Israel and

the U.S. on February 28.

Iran's military, meanwhile, remained defiant. In a statement carried by state media, the military's central command said that if "the invading U.S. military continues blockading, banditry, and piracy in the region, they should be certain that they will face a

U.S. sanctions Chinese entities for Iran oil trade

WASHINGTON

The U.S. administration has imposed sanctions on Chinese refineries for purchase of Iranian crude oil and other petroleum products. Around 40 Chinese shipping companies and vessels that operate as part of Iran's 'shadow fleet' have also been sanctioned under the Donald Trump administration. » PAGE 12

response from Iran's powerful armed forces".

Since the last round of talks, efforts to bring the two sides back to the table have hit an impasse, with Iran refusing to participate as long as a U.S. naval blockade on its ports remains in place. The Islamic Republic has imposed a de-

facto blockade of its own on the Strait of Hormuz, allowing only a trickle of ships to pass through the waterway, throwing global energy markets into turmoil. Oil prices slid on Friday amid hopes that fresh peace talks would see an end to Tehran's disruption of trade through the strait.

European Council President Antonio Costa said the strait "must immediately reopen without restrictions and without tolling". "This is vital for the entire world," Mr. Costa said.

On Thursday, U.S. President Donald Trump announced a three-week ceasefire extension in Lebanon and spoke in glowing terms of peace prospects for the country after meeting with Israeli and Lebanese envoys. He voiced hope for a three-week meeting with Lebanon

and Israel's leaders.

But Mohammed Raad, the head of the parliamentary bloc for Hezbollah, urged the Lebanese government to withdraw from direct talks with Israel and warned that a lasting peace deal of the kind sought by Trump "will in no way enjoy Lebanese national consensus".

Israeli Prime Minister Benjamin Netanyahu, who has vowed to destroy Hezbollah, said: "We have started a process to reach a historic peace between Israel and Lebanon, and it's clear to us that Hezbollah is trying to sabotage this."

Despite the ceasefire, Lebanon's health ministry said Israeli strikes on Saturday in the Nabatieh district of the south of the country had killed four people.

WARTIME APPARATCHIK
» PAGE 9

- **Key Terms and Explanations**

- **Mediation:** The process where a neutral third party (Pakistan) facilitates negotiations between two conflicting parties (U.S. and Iran).
- **Shadow Fleet:** A network of ships used to bypass international sanctions, often by hiding ownership or turning off tracking transponders to transport oil.
- **De Facto Blockade:** A situation where trade is effectively halted by military presence or threats, even without a formal, legal declaration of a blockade.
- **Strait of Hormuz:** A strategic chokepoint between the Persian Gulf and the Gulf of Oman; it is the world's most important oil transit channel.
- **Ceasefire Extension:** A formal agreement to temporarily stop fighting, in this context referring to the Israel-Lebanon conflict.

- **Main Arguments and Substantive Parts**

- **U.S. Disengagement:** The U.S. administration has signaled a retreat from mediated talks in Pakistan, citing "infighting" and "confusion" within the Iranian leadership as a reason to stall diplomacy.
- **Pakistan as a Bridge:** Pakistan maintains its stance as a neutral mediator, attempting to facilitate dialogue between Tehran and Washington to prevent regional escalation.
- **Economic Warfare:** The U.S. continues to use secondary sanctions against Chinese entities to cripple Iran's oil revenue, aiming to force Iran to the negotiating table from a position of weakness.
- **Regional Resistance:** Iran remains defiant, threatening counter-measures in the Strait of Hormuz if naval blockades persist, while non-state actors like Hezbollah resist U.S.-led peace terms.

- **Historical Evolution of the Issue**

- **Pre-1979:** Iran and the U.S. were close allies under the Shah; Pakistan was a key Western ally in the Cold War (CENTO/SEATO).
- **The 1979 Revolution:** The Islamic Revolution in Iran turned the U.S.-Iran relationship into one of "strategic enmity."
- **Post-9/11:** Pakistan's "Frontline State" status in the War on Terror complicated its ties with Iran, which viewed U.S. presence in its neighborhood with suspicion.
- **JCPOA Era (2015):** A brief period of de-escalation followed by the U.S. withdrawal from the nuclear deal in 2018, leading to the current "maximum pressure" policy and "shadow wars."
- **Present Day:** A shift toward "minilateralism" where regional players like Pakistan and Oman attempt to fill the vacuum left by traditional diplomacy.

- **Way Forward**

- **Back-channel Diplomacy:** Instead of public social media declarations, quiet diplomacy through neutral actors like Oman should be prioritized.
- **Energy Diversification:** For countries like India, the volatility in the Strait of Hormuz necessitates faster adoption of renewable energy and Strategic Petroleum Reserves (SPR).
- **Regional Collective Security:** West Asian nations must develop a security framework that doesn't rely solely on external superpowers.

- **All Previous Years' UPSC Questions**

- **UPSC 2017 (GS II):** "The "strait of Hormuz" is the most important chokepoint in the world. Discuss its significance for India."
- **UPSC 2020 (GS II):** "Critically examine the role of Pakistan as a facilitator in the US-Taliban peace process and its implications for India." (Thematic similarity: Pakistan as a mediator).
- **UPSC 2022 (GS II):** "Discuss the impact of the US-Iran conflict on India's energy security and its diaspora in the Middle East."



U.S. envoys not to travel to Pakistan, says Trump

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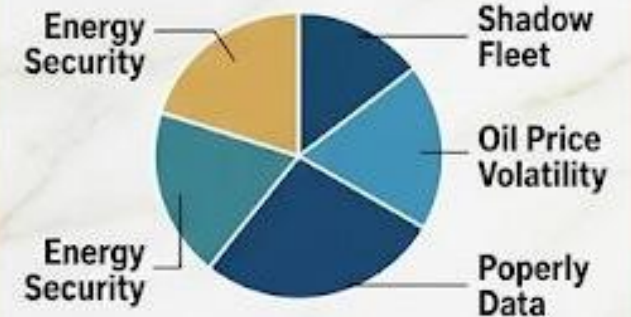
Main campus



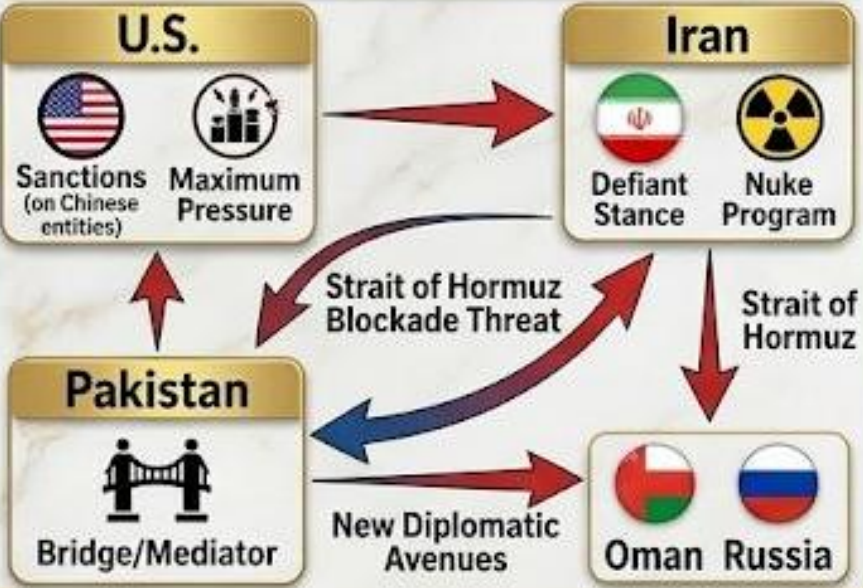
Regional Mediation in Focus

- "I Iranian FM and Pakista Army Chief
- Pakistani Army Chief meeting

Economic Impact on India



U.S.-Iran Relations and Regional Impact



Geopolitical Challenges

- Shadow Fleet
- Hezbollah Resistance
- Hezbollah Resistance
- Terana and Granslaltions

Way Forward

- Back-channel Diplomacy
- Regional Collective Security



Linkages to Syllabus

GS Paper II/III, Eth. Ethics

* References, proposts: U.S. Firar ian Connest on Army Chief

U.S. sanctions waiver on Chabahar ends

With Washington ruling out an extension of the sanctions waiver on Iranian oil, India faces a choice between continuing its role at Chabahar port and risking penalties or scaling back; officials say a transfer of the IPGL subsidiary's stake to an Iranian firm is being explored to navigate sanctions

Suhasini Haidar
NEW DELHI

As the U.S. sanctions waiver for Iran's Chabahar port ends on Sunday, the government faces a major test in strategic autonomy, as it may have to choose between exiting the 23-year-old port project or facing American sanctions.

Officials of the Ministry of External Affairs (MEA) have been holding talks with U.S. counterparts on the issue since October 2025, when Washington extended the waiver for six months until April 26, 2026, to give India time to "wind down" the project. Given the U.S.-Iran war and a series of U.S. measures targeting Iran under the U.S. Treasury's "Operation Economic Fury", officials said they were not hopeful of another extension.

On Friday, U.S. Treasury Secretary Scott Bessent made it clear that Washington would not extend the waiver of sanctions on the purchase of Iranian oil that expired on April 19.

"Not the Iranian [sanctions]," Mr. Bessent said, according to the Associated Press. "We have the blockade, and there's no



In 2016, Prime Minister Narendra Modi had travelled to Tehran and signed a trilateral agreement among India, Iran and Afghanistan to operationalise the Chabahar route. FILE PHOTO

oil coming out." "And we think in the next two, three days, they're going to have to start shuttering production, which will be very bad for their wells," he said, outlining the U.S. strategy to squeeze Iran's heavily sanctioned economy further.

As a result, the government has been exploring a number of other options to minimise its exposure to American sanctions. Since November 2025, the government has withdrawn all its personnel from Chabahar, prepaid its invest-

ment commitment of \$120 million, and is now considering transferring its stake in the Shahid Beheshti Terminal at Chabahar to an Iranian company, leaving the option of returning at a later date.

Transfer of stake

On Saturday, an official confirmed that the transfer of the stake owned by India Ports Global Chabahar Free Zone (IPGCFZ), a wholly owned subsidiary of India Ports Global Limited (IPGL), to a local company was under discus-

sion, but had not been effected yet.

Speaking to *The Hindu*, former Ambassador to Iran Gaddam Dharmendra called the plan to transfer India's stake a "tactical workaround", given "increasingly difficult and chaotic U.S. decisions" impacting India-Iran ties.

"In enlisting a local partner, [India is] not actually exiting a strategic project but safeguarding India's interests on a project of tremendous long-term importance. It's equally important that the

Iranians should know that we remain vested in this critical bilateral project," he added, pointing out that India's other regional infrastructure project IMEC (India-Middle East-Europe Economic Corridor) is also unlikely to "take shape any time soon", given the fractures within the Gulf countries, enhancing Chabahar's importance.

Although the original Chabahar port agreement between India and Iran was signed in 2003, U.S. sanctions have consistently slowed down progress on the major connectivity project from India through Iran to Afghanistan and Central Asia, while circumventing transit hurdles from Pakistan.

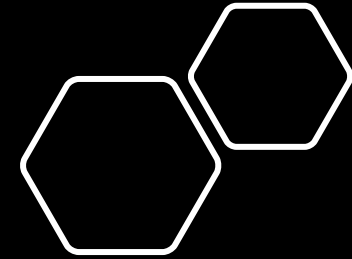
In 2016, Prime Minister Narendra Modi travelled to Tehran and signed a trilateral agreement among India, Iran and Afghanistan to operationalise the Chabahar route with ambitions to develop the port, as well as a road project and railway line from Chabahar-Zahedan over the Afghan border.

In 2018, the U.S. agreed to a "carve-out" exception for India to use the route to send food and aid to Afghanistan, but subsequently changed policy, mount-

ing pressure on India to curtail ties with Iran, including oil imports, trade, and the Chabahar port. In 2019, the U.S. introduced sanctions to curb steel trade as well, which disrupted India's plans to provide rolling stock (coaches), tracks, switching and signalling equipment, and after several delays, Iran dropped India from the railway project. In May 2024, the government tried to re-energise the project, signing a 10-year agreement with the Iranian government to develop the port.

However, on February 4, 2025, U.S. President Donald Trump issued the National Security Presidential Memorandum (NSPM-2) that mandated the U.S. Secretary of State to "modify or rescind sanctions waivers, particularly those that provide Iran any degree of economic or financial relief, including those related to Iran's Chabahar port project".

The order made it clear, long before the war in West Asia began, that Washington expected New Delhi to shut down its involvement in the Chabahar project, which was decades in the making, and is now at a dead end.






- **Key Terms and Explanations**

- **Strategic Autonomy:** The ability of a state to pursue its national interests and adopt its own preferred foreign policy without being constrained by other states. *Example: India maintaining ties with both Russia and the West despite the Ukraine conflict.*
- **Sanctions Waiver (Carve-out):** A legal exemption granted by a sanctioning body (like the U.S. Treasury) allowing a specific entity or country to trade with a sanctioned nation without facing penalties.
- **IPGL (India Ports Global Ltd):** A special purpose vehicle (SPV) established by the Indian government to develop and manage the Chabahar Port.
- **INSTC (International North-South Transport Corridor):** A multi-modal transportation route linking the Indian Ocean and Persian Gulf to the Caspian Sea via Iran, then to northern Europe.
- **IMEC (India-Middle East-Europe Economic Corridor):** A planned economic corridor aimed at connecting India to Europe via the UAE, Saudi Arabia, Jordan, and Israel.
- **NSPM-2:** A U.S. National Security Presidential Memorandum that directs the executive branch to modify or rescind specific sanctions waivers.

- **Main Arguments and Substantive Parts**

- 
- The core thesis focuses on the **binary choice** India faces: either exit a multi-decadal strategic project or face the secondary sanctions of a resurgent "maximum pressure" campaign from Washington.
 - **The Pragmatic Shift:** India is exploring a "tactical workaround" by transferring its stake in the Shahid Beheshti Terminal to an Iranian firm. This allows India to maintain a footprint without having its state-backed entities directly exposed to the U.S. Treasury.
 - **The Security-Economy Paradox:** While the port is economically vital for reaching Central Asia, the U.S. views it through the lens of "Operation Economic Fury," a strategy designed to squeeze the Iranian economy to its breaking point.
 - **The Fragility of Alternatives:** The IMEC project, often seen as a rival or alternative to routes through Iran, is currently stalled due to regional instability in the Middle East, making the Chabahar route more strategically significant than ever for India.

- **Historical Evolution of the Issue**

- **2003 (The Genesis):** India and Iran signed the original agreement to develop Chabahar during President Khatami's visit to India.
- **2015-2016 (The Golden Era):** Following the JCPOA (Iran Nuclear Deal), PM Modi visited Tehran. A trilateral agreement was signed between India, Iran, and Afghanistan to operationalize the port.
- **2018 (The Setback):** The U.S. withdrew from the JCPOA. However, India secured a "carve-out" for Chabahar, primarily to facilitate aid to Afghanistan.
- **2021 (The Taliban Shift):** The fall of Kabul changed the port's utility from "aid delivery" to "commercial transit," complicating the justification for U.S. waivers.
- **2024-2026 (The Deadlock):** India signed a fresh 10-year agreement to develop the port, but a change in U.S. administration and the signing of NSPM-2 in February 2025 led to the current expiration of all waivers.

- **Way Forward**

- **Rupee-Rial Trade:** Strengthening non-dollar payment mechanisms to bypass the U.S. financial system.
- **Diplomatic Reciprocity:** Leveraging India's importance in the "Indo-Pacific" strategy to negotiate a permanent, specific carve-out for Chabahar.
- **Multilateralizing the Project:** Bringing in Central Asian Republics (Uzbekistan, Kazakhstan) as stakeholders to make the project "too big to fail" or sanction.
- **Expediting Rail Links:** Completing the Chabahar-Zahedan line to ensure the port isn't a "bridge to nowhere."

- **Previous Years' UPSC Questions**

- **2017 (GS 2):** "What is the strategic importance of Chabahar Port for India?"
- **2018 (GS 2):** "In what ways would the ongoing US-Iran tensions affect India's national interests?"
- **2020 (GS 2):** "India's relations with Israel have, of late, acquired a depth and diversity, which cannot be rolled back." (Relevant for the IMEC vs. Chabahar comparison).
- **Prelims (2017):** Question on the location of Chabahar and its significance in bypassing Pakistan.

GEOPOLITICAL ANALYSIS: THE END OF THE CHABAHAR SANCTIONS WAIVER (U.S.)

KEY CONCEPTS DEFINED



Strategic Autonomy



Sanctions Carve-out



IPGL



INSTC



IMEC

HISTORICAL TIMELINE



THE BINARY CHOICE (INDIA'S DILEMMA)

STAY AT CHABAHAR

Strategic Autonomy
Central Asia Access
INSTC Vitality

U.S. Countermeasures
Financial Blockade
Stake Transfer Workaround

EXIT CHABAHAR

Reduce Risk
Quad Alignment

CPEC Dominance
Lost Strategic Footprint
Weakened Central Asia Policy



REGIONAL MAP & CONNECTIVITY



STRATEGIC AUTONOMY

- **CHALLENGES:** implementation risk, Stakeholder resistance
- **WORKAROUNDS**
 - Stake transfer to Iranian firm,
 - non-dollar payments
 - multilateralizing (Central Asian partners)
- **LONG-TERM VIABILITY**
Questionable; depends on private capital

MULTIDIMENSIONAL ANALYSIS



STRATEGIC AUTONOMY: IMPACT & WORKAROUNDS

- **CHALLENGES**
 - implementation risk, stakeholder resistance
- **WORKAROUNDS**
 - Stake transfer to Iranian firm
 - non-dollar payments
 - multilateralizing (Central Asian partners)
- **LONG-TERM VIABILITY**
 - Questionable; depends on private capital



A global film headlined by an Assam-born actor finds a spot at Guadalajara fete

The Hindu Bureau
GUWAHATI

A British-produced and Portuguese-directed film with an Assam-born actor in the lead role was screened at the 41st Guadalajara International Film Festival in Mexico on Friday.

A Teacher's Gift was part of the Premio Magüey section, one of the festival's prominent competitive strands, regarded as one of the leading cinematic events in Central and Latin America.

Directed by Artur Ribeiro of Portugal and produced by Eric Ollerenshaw of the U.K., the film features an ensemble cast, including Anjali Patil, Dhruv Sehgal, and Varun Buddha-dev. Rajdeep Choudhury, born in Silchar in southern Assam, is the lead actor and writer of the film.

Increasing visibility

Mr. Choudhury has previously appeared in Hindi films such as *Jack & Dil* and *Mister Mummy*. His journey from Northeast India to the U.K. adds a per-



A still from the film *A Teacher's Gift*. SPECIAL ARRANGEMENT

sonal dimension to the film's growing global presence, reflecting the increasing visibility of regional voices in contemporary cinema.

Before its selection in Guadalajara, *A Teacher's Gift* built a steady presence across the international festival circuit, with official selections at Tribeca Film Festival Lisboa, the International Film Festival of India, and the IRIS Prize Film Festival. It won the Best British Asian Feature Film of Bridging Cultures in the U.K. Asian Film Festival in London 2025.

A Teacher's Gift has been selected for the Unrestricted View Film Festiv-

al, a BIFA-qualifying festival, making it eligible for consideration at the British Independent Film Awards, 2026. In addition, it was included in the WAVES Bazaar film market, connecting it with industry professionals and expanding its reach within global networks.

"Bringing *A Teacher's Gift* to an international audience at Guadalajara is a deeply meaningful moment for me. The story is rooted in personal experiences, and to see it travel across cultures and connect with diverse audiences is both humbling and encouraging," Mr. Choudhury said.

- **Key Terms and Explanations**
- **Soft Power:** The ability of a country to influence others through cultural or ideological appeal rather than coercion (hard power). Cinema is a primary tool for India's soft power.
- **Ensemble Cast:** A cast in which the principal actors are assigned roughly equal amounts of importance and screen time.
- **Film Market (e.g., WAVES Bazaar):** A business-focused event held alongside film festivals where producers, distributors, and agents buy and sell film rights.
- **BIFA-Qualifying:** Refers to the British Independent Film Awards. Being screened at a qualifying festival makes a film eligible for one of the UK's most prestigious film honors.
- **Global South Narratives:** Stories originating from or focusing on the experiences of people from developing nations or underrepresented regions (like Northeast India) on a global stage.

- **Main Arguments and Substantive Parts**
- The core thesis focuses on the **democratization of global cinema**, where regional Indian identities are moving beyond domestic "niche" categories to mainstream international acclaim.
- **Transnational Collaboration:** The film *A Teacher's Gift* represents a hybrid model—British-produced and Portuguese-directed but led and written by an Indian (Assamese) talent. This suggests that artistic boundaries are becoming increasingly fluid.
- **The "Local to Global" Pipeline:** The article tracks the film's journey through diverse circuits—from the UK Asian Film Festival to the Guadalajara International Film Festival (Mexico). This proves that deeply personal, regional stories have universal emotional resonance.
- **Recognition of Northeast Talent:** The focus on Rajdeep Choudhury highlights a shift. Historically, Northeast India was underrepresented in Indian mainstream media; now, its talent is bypassing traditional "Bollywood" gatekeepers to find direct success in global independent cinema.



- **Historical Evolution of the Issue**

- **Pre-Independence & Early Post-Independence:** Indian cinema was largely centered in Bombay and Calcutta. Regional cinema (including Assamese) was prolific but rarely found viewership outside its linguistic borders.
- **The 1950s (The Golden Age):** Figures like Satyajit Ray took Indian regional sensibilities to Cannes and Venice, establishing the "Parallel Cinema" movement.
- **The 1990s (Liberalization):** The Indian diaspora grew, creating a market for Indian films abroad, though this was initially limited to big-budget Hindi musicals.
- **2010s to Present:** The digital revolution and the rise of international film festivals have allowed actors and directors from states like Assam (e.g., Rima Das's *Village Rockstars*) to gain global recognition without needing the traditional Mumbai-centric launchpad.

- **Way Forward**

- **Institutional Support:** State governments (like Assam) should create "Export Promotion Councils" for regional cinema to help filmmakers navigate international festivals.
- **Subtitling Grants:** Provide government subsidies for high-quality translation and subtitling to break the language barrier.
- **Film Tourism:** Leverage international success to promote the Northeast as a filming destination, boosting local economies.

- **Previous Years' Questions (PYQs)**

- **UPSC 2023 (GS1):** "Explore and evaluate the impact of the emergence of digital media on Hindi cinema." (Related theme: Evolution of Indian Cinema).
- **UPSC 2017 (GS2):** "Indian Diaspora has a decisive role to play in the politics and economy of America and European Countries." (Related theme: Indians contributing to global creative industries).
- **APSC 2020:** Questions regarding the contribution of Assam to Indian culture and the global recognition of Assamese icons.

CASE STUDY: 'A TEACHER'S GIFT'

Lead Actor/Writer:
Rajdeep Choudhury
(from Silchar, Assam).



Direct Jump: From regional roots to international production, bypassing traditional hubs.

ASSAM
ROOT



GLOBAL
FILM

UPSC & NCERT LINKAGES

NCERT (Class 12) - Cultural Change & Globalisation

GS Paper 1: Indian Culture & Regionalism

GS Paper 2: International Relations & Soft Power

GS Paper 4: Ethics & Universal Values

APSC: Assam's Cultural Contribution & APSC PYQs.

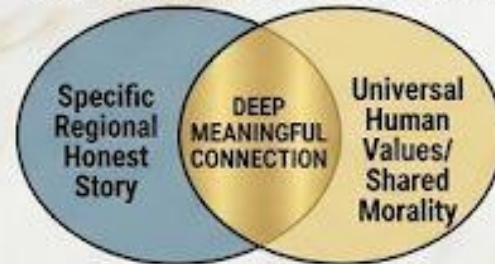


GLOBAL ACCOLADES FOR REGIONAL CINEMA: A CASE STUDY IN CULTURAL SOFT POWER

AXIA IAS ANALYSIS: KEY CONCEPTS & DIMENSIONS

CONCEPTUAL BASE

UNIVERSALISM & PARTICULARISM



A Teacher's Gift as a personal experience connects across cultures.

MULTIDIMENSIONAL IMPACT



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GLOBAL FESTIVAL TRAJECTORY



Democratization of global cinema:
local narratives with universal resonance.

CHALLENGES & WAY FORWARD

- CHALLENGES:** (e.g., funding barriers, stereotyping)
- STEREOTYPES**

WAY FORWARD: Establish Export Promotion Councils, Subtitling Grants.



Ashok Lahiri is new NITI Aayog Vice-Chairperson

The Hindu Bureau

NEW DELHI

The Union government appointed Ashok Kumar Lahiri, economist and MLA in West Bengal, Vice-Chairperson of the NITI Aayog on Saturday.

Mr. Lahiri, a former Chief Economic Adviser to the government, replaces Suman K. Bery, who has been the Vice-Chairperson of the government's think-tank since May 2022.

Economist K.V. Raju, Director of AIIMS M. Srinivas, Secretary of the Department of Science and Technology Abhay Karandikar, scientist Gobardhan Das, and former Cabinet Secretary Rajiv Gauba are the full-time members on the re-constituted panel.

Mr. Gauba was a member of the outgoing panel as well.

Vijay Kumar Saraswat, Ramesh Chand, Vinod Kumar Paul, and Arvind Virmani were the other members of NITI Aayog.

Announcing the new leadership for NITI Aayog, Prime Minister Narendra Modi wished Mr. Lahiri and other members a pro-



Ashok Kumar Lahiri

ductive and impactful tenure ahead.

'Vital pillar'

He said NITI Aayog had emerged as a vital pillar in India's policy-making architecture, fostering cooperative federalism, furthering reforms and boosting ease of living.

"I am confident his efforts will further energise policymaking in our nation. My best wishes for a fruitful tenure," Mr. Modi, also the Chairman of the NITI Aayog, said.

Mr. Lahiri, MLA for Balurghat, is not contesting the ongoing election in West Bengal. He has been a member of the 15th Finance Commission.

• **Key Terms and Explanations**

- **NITI Aayog (National Institution for Transforming India):** Established on January 1, 2015, replacing the Planning Commission. It serves as the premier policy "Think Tank" of the Government of India, providing both directional and policy inputs.
- **Cooperative Federalism:** A concept where the Centre and States work together to solve common problems. NITI Aayog facilitates this through the Governing Council, which includes all State Chief Ministers.
- **Vice-Chairperson:** The administrative head of NITI Aayog. While the Prime Minister is the ex-officio Chairman, the Vice-Chairperson holds the rank of a Cabinet Minister and handles day-to-day operations.
- **Chief Economic Adviser (CEA):** A post in the Ministry of Finance responsible for the Economic Survey and advising the government on market-related and macro-economic issues.
- **Finance Commission:** A constitutional body (Article 280) that defines the financial relations between the Central government and the individual State governments.

• **Main Arguments and Substantive Parts**

- The core focus of the leadership change is the infusion of **technocratic expertise** into policy-making.
- **Shift from Political to Technical Leadership:** The appointment of an economist (Ashok Lahiri) signifies a preference for data-driven governance over purely administrative or political management.
- **Continuity vs. Change:** While the Vice-Chairperson is new, the retention of several full-time members suggests a desire for institutional memory alongside new perspectives.
- **Role in Policy Architecture:** The leadership is tasked with "fostering cooperative federalism" and "boosting ease of living," suggesting that NITI's success is measured by how well it bridges the gap between high-level policy and ground-level implementation.



- **Historical Evolution of the Issue**
- **Pre-Independence:** The National Planning Committee (1938) under Nehru and the Bombay Plan (1944).
- **Post-Independence (1950):** Establishment of the **Planning Commission**. It followed a top-down approach (command economy model) and had the power to allocate funds to states.
- **The Shift (2014-2015):** The Planning Commission was viewed as an "expired" colonial-era remnant that didn't fit a diversified market economy.
- **Present Day:** NITI Aayog operates on a "Bottom-Up" approach. It does not allocate funds (a power now with the Finance Ministry) but focuses on competitive and cooperative federalism.

- **Way Forward**
- **Statutory Status:** Consider making NITI Aayog a statutory body to enhance its independence.
- **Bridging the Fiscal Gap:** While it shouldn't return to fund allocation, it could play a formal role in advising the Finance Commission on state-specific performance grants.
- **Capacity Building:** Focus on strengthening the planning departments at the district level to ensure the "Bottom-Up" approach isn't just a slogan but a reality.

- **Previous Years' Questions (UPSC)**
- **Mains (2015):** "How is NITI Aayog different from the erstwhile Planning Commission?" (GS2)
- **Mains (2017):** "The strength of the local institutions depends upon the combined strength of the states and the centre. Discuss in the context of NITI Aayog." (GS2)
- **Prelims (2015):** Questions on the composition of the Governing Council of NITI Aayog.

ANALYSIS: NITI AAYOG'S NEW LEADERSHIP & STRATEGIC ROLE



AXIA
IAS ACADEMY

AXIA COMPETITIVE EXAM CENTRE



Dr. Ashok Kumar Lahiri
Vice-Chairperson



Mr. Suman K. Bery
Vice-Chairperson

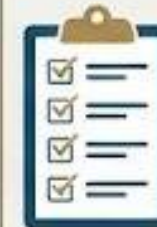
Technocratic Infusion



Data-Driven Policy

Appointment of Economist Dr. Lahiri reinforces expertise.

Key Mandates



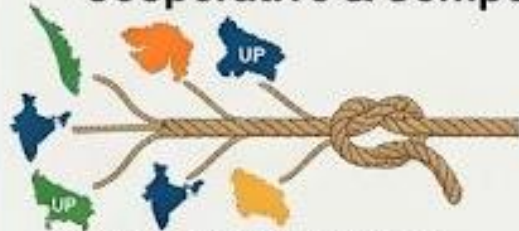
- Fostering Cooperative Federalism
- Boosting Ease of Living
- Driving Structural Reforms (GST, IBC)

Planning Commission vs. NITI Aayog

Planning Commission (1950) vs. NITI Aayog (2015)



Cooperative & Competitive Federalism



Cooperative Federalism



Competitive Federalism



V.K. Paul



K.V. Raju



V.K. Paul



Arvind Virmani



Arvind Virmani

Panel of Specialists

Way Forward (Infographic)

1. Statutory Status?
2. Strengthening State Capacity
3. Global SDG Alignment



No restriction on women's entry into mosques to offer namaz, AIMPLB informs Supreme Court

Ziya Us Salam

NEW DELHI

In a significant upshot for Muslim women seeking permission to offer prayers inside mosques, the All India Muslim Personal Law Board (AIMPLB) has admitted before the Supreme Court that there is no restriction in Islam on women entering mosques to offer namaz.

Senior advocate M.R. Shamshad, appearing for the Board, made the submission before a nine-judge Bench headed by Chief Justice of India Surya Kant hearing the Sabarimala reference case, with related petitions on women's entry into mosques tagged to the case as they too involve constitutional



questions with respect to Articles 25 and 26.

The question of the right of women to enter mosques stemmed from a PIL petition filed in March 2019 by a Pune-based couple, Yasmeen Zuber Ahmad and her husband, Zuber Ahmad Nazir Ahmad Peerzade.

The couple had requested the Mohmidiya Jama Masjid in Pune to allow wo-

men entry to offer prayers. However, the request was denied following which Ms. Yasmeen approached the Supreme Court seeking relief under the writ of mandamus.

Broad agreement

In the ongoing case, Mr. Shamshad said Islamic practice does not bar women from entering mosques, though their participation in congregational prayers is not mandatory.

Asked by the Chief Justice of India on whether women were allowed to enter a mosque, Mr. Shamshad said there was broad agreement across Islamic denominations on this point.

"The Prophet himself said, 'Don't stop women

coming to the mosque.' There is clarity on this," he said.

The senior advocate pointed out that while it is essential for men to attend congregational prayers in the mosque, women had a choice. They were exempted, not prohibited. "For a woman, it is preferable that she stays at home and prays, and she gets the same religious reward. But if a woman wants to come, she can come," he said.

"Since there is no sanctum sanctorum inside the mosque, nobody can insist to stand at a particular place or, for that matter, to be the first to lead the namaz," he said. However, he pointed out that there is a certain procedure and "certain discipline that has

to be followed" inside the premises of a mosque.

No insistence

Mr. Shamshad said that while Islam does not bar women from visiting mosques, they cannot insist on entering through the main door or demand the removal of physical barriers separating men and women inside mosques.

There are separate halls for men and women in Islamic places of pilgrimage at Mecca and Medina in Saudi Arabia. Women participate in five daily prayers besides the Friday prayers. They perform Haj too. In India, mosques are designed keeping in mind only men with almost no attention paid to women worshippers.

- **Key Terms and Explanations**

- **AIMPLB (All India Muslim Personal Law Board):** A non-governmental organization constituted to protect and apply the Muslim Personal Law (Shariat) Application Act, 1937. It acts as an influential voice on Islamic legal matters in India.
- **Writ of Mandamus:** A constitutional remedy under **Article 32** (Supreme Court) or **Article 226** (High Court). It is a command issued to a public authority to perform a legal duty they have failed to do.
- **Articles 25 & 26:** * **Article 25:** Guarantees freedom of conscience and the right to freely profess, practice, and propagate religion, subject to public order, morality, and health.
 - **Article 26:** Guarantees the right of religious denominations to manage their own affairs in matters of religion.
- **Namaz/Congregational Prayer:** The ritual prayer of Muslims. "Congregational" refers to praying in a group (Jama'at), which is traditionally viewed as highly meritorious.
- **Sanctum Sanctorum:** The most sacred part of a religious building (e.g., the area around the *Mihrab* in a mosque). The article notes that technically, Islam does not have a "restricted" sanctum sanctorum like some other faiths, as the entire prayer hall is considered sacred.

- **Main Arguments and Substantive Parts**

- **The Permissibility Factor:** The core argument is that Islamic scripture does not prohibit women from entering mosques. The AIMPLB's submission emphasizes that the Prophet himself discouraged stopping women from attending mosques.
- **Mandatory vs. Optional:** A distinction is drawn between gender obligations. While congregational prayer is seen as mandatory for men, it is optional (preferable at home, but allowed in mosques) for women.
- **The "No Insistence" Clause:** While entry is permitted, the Board argues that women cannot demand "gender-neutral" entry (using the same doors) or the removal of physical barriers (purdah/separation) that are part of the established "discipline" of the space.
- **Global Precedent:** The practice in Mecca and Medina (Saudi Arabia), where separate halls for men and women exist and women participate in Hajj and daily prayers, is used as evidence of universal Islamic acceptance.

- **Historical Evolution of the Issue**

- **Pre-Independence:** The 1937 Shariat Act codified personal laws, often leaving local customs to dictate mosque entry, which in many parts of South Asia became male-dominated.
- **Post-Independence:** The secular framework of the Indian Constitution (1950) introduced the "Essential Religious Practices" test by the Judiciary.
- **The Sabarimala Turning Point (2018):** The Supreme Court ruling that "devotion cannot be subjected to gender discrimination" opened the door for challenges against similar restrictions in other faiths.
- **2019-Present:** A Pune-based couple filed a PIL seeking mosque entry, leading to the current judicial scrutiny alongside the Sabarimala reference case.

- **Way Forward**




- **Infrastructure Development:** Use Waqf Board funds to renovate mosques with dedicated female sections.
- **Sensitization:** Collaborative dialogues between the AIMPLB, local Imams, and women's rights groups to ensure the transition is smooth and respectful.
- **Judicial Clarity:** The Supreme Court should provide a clear "Constitutional Test" to balance Article 25 and Article 26 to prevent future conflicts in other religious spaces.

- **Previous Years' Questions (PYQs)**

- **Mains (2019):** "Customs and traditions suppress reason leading to obscurantism. Do you agree?"
- **Mains (2017):** "The concept of 'Constitutional Morality' is rooted in the Constitution itself and is founded on its essential facets. Explain."
- **Mains (2020):** "How have digital initiatives in India contributed to the functioning of the education system in the country?" (Context: Use of tech for awareness of legal rights).

COMPREHENSIVE ANALYSIS: WOMEN'S ENTRY INTO RELIGIOUS SPACES & GENDER JUSTICE

Key Terms & Legal Concepts

-  **AIMPLB (All India Muslim Personal Law Board):** Protects Muslim Personal Law (Shariat Act, 1937)
-  **Writ of Mandamus:** Court command for public duty
-  **Constitutional Morality:** Overrides traditional morality for justice

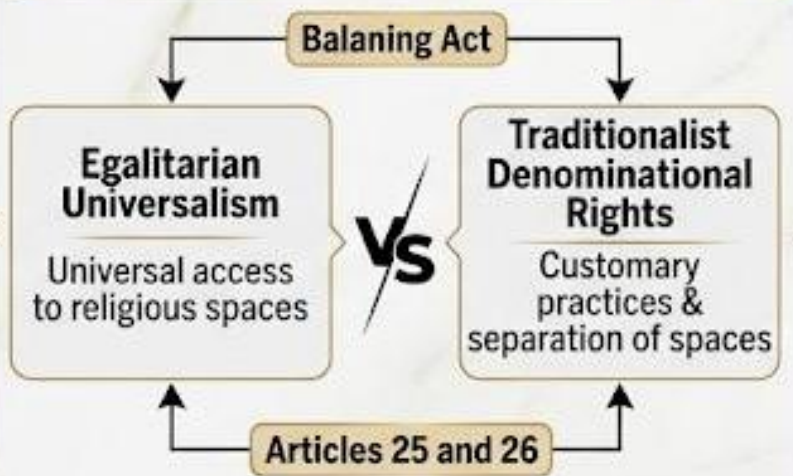
Historical & Judicial Evolution



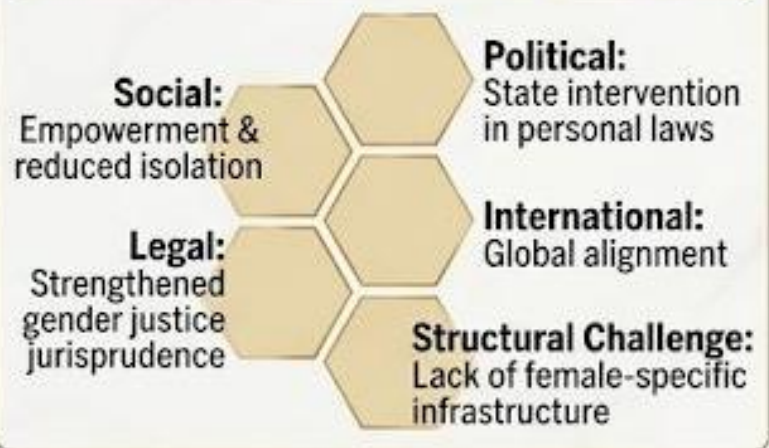
Way Forward

-  **1. Infrastructure Dev:** Modernize mosques
-  **2. Sensitization:** Community dialogues
-  **3. Judicial Clarity:** Consistent constitutional tests

Substantive Issues & Logical Framework



Multidimensional Impact & Challenges



UPSC Relevant Linkages

-  **GS 1 (Society)**
 -  **GS 2 (Polity, Judiciary)**
 -  **GS 4**
 -  **Essay**
- BEST LINKAGE**
Constitutional Morality
- PYQ**
Sample on prescription of infection



KEY TAKEAWAY

Doctrine of Essentiality
Clear mosque with inclusive access

Count the vulnerable: Census chief

Registrar-General Mritunjay Kumar Narayan asks officials to ensure that such sections of people, including those affected by communal, political and social tensions, are counted as any omission may lead to litigation in future; information on demolition and new constructions is be noted, he adds

Vijaita Singh
NEW DELHI

The Registrar-General and Census Commissioner, Mritunjay Kumar Narayan, has asked the State directorates to identify and prepare a list of villages, habitats, and sections of the population vulnerable to "threat, intimidation or interference" during the ongoing Census exercise.

The Commissioner asked the States to avoid enumerators who may be biased towards specific social or religious communities as far as possible as their appointment for fieldwork could prove counter-productive.

In an April 20 communication to the Directorate of Census Operations, Mr. Narayan asked officials to ensure that vulnerable sections of people, which include those affected by communal, political, and social tensions, are counted as any omission may lead to litigation in future.

Earlier this week, three members of a family were

arrested in Dhenkanal, Odisha, for allegedly attacking four teachers when they went to the house for Census fieldwork.

A central support helpline, 1855, for queries or guidance related to the first phase of the Census, House Listing Operations (HLO), has been launched. The Census is being conducted in two phases – HLO and Population Enumeration.

The first phase will be conducted from April 1 to September 30 in phases for all States. The second phase, which will also count caste, will be carried out in February 2027. This is the first digital Census and the first to allow self-enumeration.

Risk assessment

The charge officers, who are in charge of field operations, have been asked to prepare the list by touring the areas extensively and in consultation with the local village officials, police or block development officials.

"They should identify



Counting on: The States are directed to avoid enumerators who may be biased towards any community. SUSHIL KUMAR VERMA

the source of such threat/intimidation and identify the names of persons who are likely to spearhead such offence of undue influence. While doing this exercise they shall take into account both the past incidents and the current apprehensions," Mr. Narayan said.

He added that a plan should be ready to cover areas which were difficult to access, such as forest villages and hamlets.

"Similarly, every district would have people who are difficult to be enumer-

ated. Such groups would include people who are highly mobile/floating population like migrant labour, those engaged in occupations like herding of sheep/cattle and such other nomadic tribes, gatherers of forest produce, seafarers who are likely to be absent during the entire period of enumeration, homeless people, street children, people living in areas affected by some form of social/political tension, etc.," Mr. Narayan said.

The Commissioner said that if a population had

now started living in villages that were uninhabited during the previous Census, then they were to be enumerated without omission.

"At the same time, the information about the areas where demolition has taken place or new residential constructions have come up or otherwise major construction activities such as road works, irrigation dams, etc. are in execution should also be available. Special efforts are required to enumerate people residing in such areas," the letter said.

Teachers on duty

Elaborating on the role of enumerators, the letter stated that the Right to Education (RTE) Act has specifically allowed the use of teachers in Census activity and they may be appointed enumerators/supervisors in the first preference.

"In case of shortage of teachers, other officials of the government and local bodies are to be appointed as Census personnel. The

officials appointed should preferably be from the local area and should be familiar with local conditions. However, if there is a situation on ground which suggests that a local would act in a biased manner and this would affect the Census, the PCO (Principal Charge Officer) should appoint persons from outside the area. However, pregnant ladies, persons with severe chronic ailments, severe disabilities, persons below matriculate, persons biased towards specific social/religious communities, etc., may be avoided to the extent possible as appointing them for fieldwork would be difficult/counter-productive," it said. Pointing out that the details once recorded cannot be altered at a later stage, he said that in the past, some of the District Magistrates had approached the Census organisation with the plea that the Census enumeration had not been carried out properly in their districts and that the situation may be rectified.

- **Key Terms and Explanations**

- **Registrar-General and Census Commissioner (RGCC):** The high-ranking official under the Ministry of Home Affairs responsible for conducting the decennial Census and the registration of births and deaths.
- **House Listing Operations (HLO):** The first phase of the Census where every building and household is identified and listed. This sets the stage for the actual population count.
- **Population Enumeration:** The second phase of the Census where detailed data about individuals (age, sex, literacy, occupation, etc.) is recorded.
- **Vulnerable Sections:** Groups at risk of being excluded due to mobility (migrants), occupation (nomads), or socio-political instability (those in conflict zones).
- **Digital Census:** A shift from paper-based forms to mobile apps and self-enumeration portals, marking a technological leap in data collection.
- **Principal Charge Officer (PCO):** The administrative head at the local or district level responsible for supervising Census operations within their jurisdiction.

- **Main Arguments and Substantive Parts**

- The core thesis revolves around the **inclusivity of the Census** as a prerequisite for social justice and administrative accuracy.
- **Risk Mitigation:** Identifying "vulnerable pockets" prone to intimidation ensures that fear does not lead to an undercount.
- **Neutrality of Enumerators:** The directive to avoid biased enumerators highlights the need for objective data. If a local official is perceived as biased, an outsider should be appointed to maintain the "sanctity of data."
- **Inclusion of Floating Populations:** Special focus is placed on "invisible" citizens—nomads, forest dwellers, seafarers, and the homeless—who often fall through the cracks of traditional governance.
- **Irreversibility of Data:** Once recorded, Census data is difficult to alter. Therefore, the "Right First Time" approach is critical to prevent future litigation or policy errors.



- **Historical Evolution of the Issue**

- **Pre-Independence (1872–1941):** The first synchronous Census was held in 1881. Under British rule, the Census often focused on "classification" (caste and religion) to facilitate 'Divide and Rule' policies.

- **Post-Independence (1948 onwards):** The **Census Act, 1948** provided the legal framework. The focus shifted to developmental planning and defining Scheduled Castes (SC) and Scheduled Tribes (ST).

- **Modern Shift (2011–Present):** The 2011 Census was the last paper-based exercise. The current delay (post-2021) has introduced discussions on the **Digital Census** and the inclusion of **caste data**, reflecting evolving political and social demands for targeted affirmative action.

- **Way Forward**

- **Capacity Building:** Training teachers and officials not just in data entry, but in sensitivity toward marginalized groups.

- **Public Awareness:** A massive "Jan Andolan" (People's Movement) to explain that Census data is for welfare, not surveillance, to reduce local resistance.

- **Technological Safeguards:** Implementing end-to-end encryption for digital enumeration.

- **Hybrid Model:** Combining digital self-enumeration with physical verification in "vulnerable pockets" to ensure 100% coverage.

- **Previous Years' Questions (PYQs)**

- **UPSC Mains 2020 (GS1):** "How have digital initiatives in India contributed to the functioning of the education system in the country?" (Analogous to digital census).

- **UPSC Mains 2011 (GS2):** Discuss the role of the Census in the context of planning and governance.

- **UPSC Prelims (Multiple Years):** Questions on the Census Act, the office of the Registrar General, and demographic dividends.

Count the Vulnerable: Census 2021 Analysis

on behalf of AXIA IAS ACADEMY

KEY MANDATES & OBJECTIVES

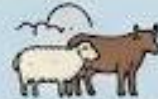
- **Ensure Inclusive Count**
All sections counted
- **Risk Mitigation**
Identify vulnerable pockets
- **Maintain Enumerator Neutrality**
Avoid community bias
- **Complete Data**
Information on demolitions & new constructions



FLOATING & MOBILE POPULATIONS



Migrant Labour



Nomadic Tribes



Forest Dwellers



Seafarers



Homeless/
Street Children



Areas with
Social Tension

RISK ASSESSMENT & PROCESS



Identify Vulnerable Pockets
(affected by communal/
political tensions)



Extensive Area Mapping
(charge officers tour
areas)



Identify Source of Threats
(persons spearheading
undue influence)



First Digital Census
(two phases: HLO &
Population Enumeration)

KEY DIRECTIVES & SAFEGUARDS

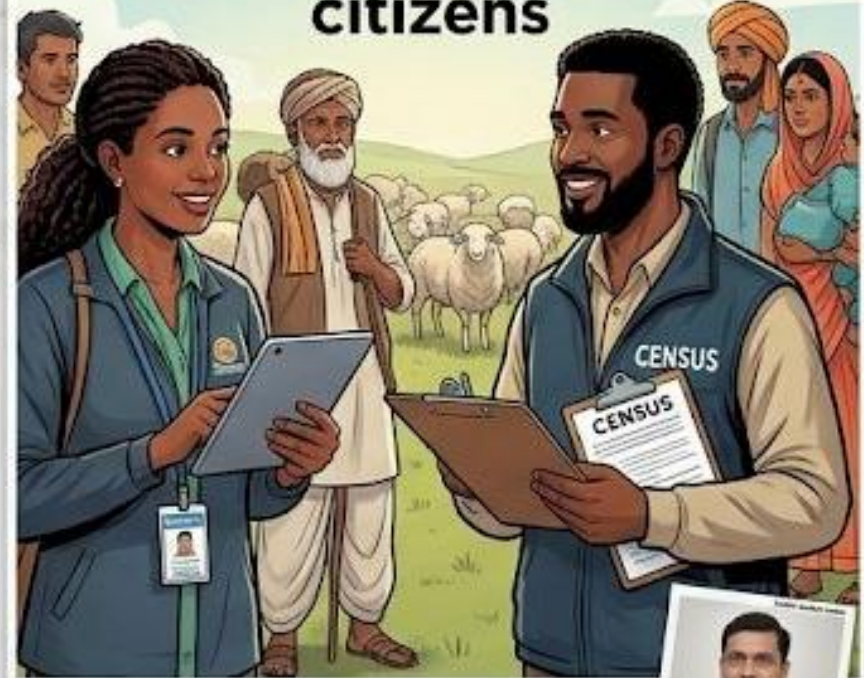
ON ENUMERATORS

- **Local Appointees Preferable**
-Outside Person for Bias Situation
- **No Biased Persons in Fieldwork**
(e.g. towards specific social/religious
communities, etc.)
- **Right to Education (RTE) Teachers on Duty**

ON DATA INTEGRITY

- **Data irrevocable once recorded**
(No later alterations)
- **Prevent future litigation**

COUNTING ALL VULNERABLE citizens



Counting on: The States are directed to avoid enumerators who may be biased towards any community.



Shipping crisis exposes gaps in India's maritime strategy

M. Kalyanaraman
CHENNAI

The war in West Asia has thrown the focus on Indian shipping and the criticality of Persian Gulf region to India's trade.

Industry leaders argue that the crisis underscores the urgent need for India to expand its national fleet. Anil Devli, CEO of Indian National Shipowners Association, emphasised that a portion of critical imports such as crude oil, LPG, coal, and fertilisers must be carried on Indian-flagged vessels. "Ships are needed today, not five or 10 years later," he said, advocating policies that encourage the acquisition of second-hand vessels to quickly build capacity.

A key structural issue lies in how India contracts its imports. A large share of cargo currently comes under Cost, Insurance, and Freight (CIF) terms, where the seller controls shipping. This limits opportunities for Indian shipowners. In contrast, Free on Board (FOB) contracts, where the buyer arranges transport, allow greater control over logistics and support domestic fleet growth.

Ideally, at least a portion of imports should be FOB and exports, CIF, for strategic reasons. Despite earlier policy preferences for FOB imports, the trend has shifted toward CIF, said Mr. Devli. This has significant financial implications, with millions in freight payments flowing overseas.

A large share of cargo currently comes under CIF terms, where sellers control shipping

Certain sectors highlight the imbalance. About half of India's crude oil imports are on FOB terms and some 40% of LPG is carried by Indian flagged carriers. But fertilisers such as urea are almost entirely imported under CIF contracts, leaving them dependent on foreign vessels. During crises, such cargo is among the first to face delays. Experts suggest that India should aim to carry at least 50% of its strategic commodities – energy and food – on its own ships.

Former Director General of Shipping Amitabh Kumar said the pattern was predictable: whenever a crisis hits, global shipping capacity tightens sharply.

This has direct implications for countries like India. Low-margin goods—particularly agricultural commodities—are often left behind, while high-value cargo such as electronics continues to move despite rising freight costs.

The impact is compounded by equipment shortages and logistical bottlenecks.

Beyond economics, the crisis has also raised concerns about the safety of seafarers. Thousands of Indian seafarers are stranded on the ships stuck in the Persian Gulf. There have been casualties, too.

- **Key Terms and Explanations**

- **CIF (Cost, Insurance, and Freight):** A trade term where the **seller** handles the cost of transport and insurance until the goods reach the destination port.

- *Example:* If India buys urea from Oman under CIF, the Omani seller chooses the ship. If a conflict breaks out, the seller might prioritize other routes, leaving India stranded.

- **FOB (Free on Board):** A trade term where the **buyer** takes responsibility once goods are loaded. The buyer chooses the shipping line and pays for insurance/freight.

- *Example:* If India buys crude oil from Iraq under FOB, an Indian vessel can be sent to pick it up, ensuring control over the supply chain.

- **Indian Flagged Vessels:** Ships registered in India that fly the Indian tricolor. They are subject to Indian laws and can be requisitioned by the government during national emergencies.

- **National Fleet:** The total merchant shipping capacity owned and operated by a country's domestic companies.

- **Strategic Commodities:** Essential goods like crude oil, LPG, and fertilizers that are vital for food and energy security.

- **Main Arguments and Substantive Parts**

- The core thesis posits that India's reliance on foreign vessels for strategic imports creates a **security vulnerability** and a **financial drain**.

- **The Vulnerability Gap:** Global crises (like those in West Asia) tighten shipping capacity. Foreign vessels often prioritize high-margin cargo (electronics) over India's low-margin, high-volume essentials (fertilizers, coal).

- **The Shift to CIF:** Despite historical preferences for FOB, India has drifted toward CIF contracts. This cedes control to foreign sellers and shipping lines, leading to billions in freight payments flowing out of the country.

- **Capacity Crunch:** India currently lacks the fleet size to handle its own strategic cargo. For instance, while 40% of LPG is carried on Indian ships, fertilizers are almost entirely dependent on foreign carriers.

- **The Proposed Solution:** India must aim to carry at least 50% of its strategic commodities on its own ships. This requires a policy shift toward acquiring second-hand vessels to build capacity rapidly.

- **Historical Evolution of the Issue**

- **Pre-Independence:** India had a rich maritime history but the British colonial "Navigation Acts" stifled indigenous shipping to benefit British lines.
- **Post-Independence (1950s-1990s):** The government emphasized "Buy Indian, Ship Indian." Public sector undertakings like the Shipping Corporation of India (SCI) were strengthened.
- **Liberalization Era (1991 onwards):** As trade opened up, the focus shifted to the lowest cost. CIF contracts became popular because they simplified logistics for Indian buyers, but at the cost of domestic fleet growth.
- **Present Day:** Geopolitical volatility (Red Sea crisis, Russia-Ukraine war) has revitalized the "Atmanirbhar" (self-reliant) narrative in the maritime sector.

- **Way Forward**

- **Financial Incentives:** Grant "Infrastructure Status" to the shipping industry to provide access to lower-cost long-term funding.
- **FOB Mandate:** Gradually mandate that 30-50% of PSU imports (Oil, Coal, Fertilizer) be handled via FOB contracts using Indian ships.
- **Tonnage Tax Reform:** Make the Indian tax regime more attractive to prevent Indian owners from "flagging out" to countries like Panama or Liberia.
- **Maritime Insurance:** Establish a domestic "Protection and Indemnity" (P&I) club to reduce reliance on Western insurance providers.

- **Previous Years' UPSC Questions**

- **Mains 2022 (GS-3):** "The lifeblood of a nation's economy is its transport and communication network." (Analyze in context of maritime trade).
- **Mains 2017 (GS-3):** "Growth of the shipping industry is a prerequisite for the growth of the Indian economy."
- **Prelims 2023:** Questions on the "Middle East-Europe Economic Corridor" (IMEC) and its impact on trade routes.

AXIA IAS ACADEMY - MARITIME STRATEGY ANALYSIS: STRENGTHENING INDIA'S SHIPPING SECURELY

THE CRISIS & ITS IMPACT (Gaps Exposed)



CRISIS UNDERSCORES NEED TO EXPAND NATIONAL FLEET

STRUCTURAL ISSUE: CONTRACTING TERMS (Key Challenge)



SHIFT FROM FOB to CIF LIMITS OPPORTUNITIES & INCREASES RISKS

THE STRATEGIC COMMODITY DEPENDENCE (The Numbers)



MULTIDIMENSIONAL CHALLENGES & SOLUTION (The Path Forward)

Challenges

- Implementation and regulatory hurdles
- Financing constraints
- Global competition

Key Proposals

- Acquiring second-hand vessels quickly
- Policy incentives for local shipyards
- A regulatory 'Right of First Refusal' update

STRATEGIC COMMODITIES (Energy and Food) ON OWN SHIPS IS CRUCIAL

STRATEGIC OPPORTUNITIES & THE WAY FORWARD



- Develop Maritime Intelligence
- Shipbuilding Hub India
- Cargo non Complation
- Strategic Autonomy

Mitigating fertiliser crunch via coal gasification a far cry

Industry players argue that coal gasification is one avenue through which domestic fertiliser supplies could be secured, but very few coal gasification projects have scaled to advanced stage

Saptaparno Ghosh
NEW DELHI

Amid pressure on supplies of urea and fertilisers due to the escalating tensions in West Asia, a possible mitigation of these shortages through coal gasification still seems distant, according to sector experts.

According to them, very few coal gasification projects have so far scaled to an advanced stage.

The Ministry of Coal, however, told *The Hindu* that the government was confident that the target of 100 million tonnes of gasification by 2030 will be met as per schedule.

As a more sustainable mining technique, coal gasification involves the conversion of coal into syngas (synthetic gas), which can be further used to produce downstream products like methanol, ammonium nitrate, synthetic natural gas (SNG) and fertilisers, among other products. Amid concerns over the domestic availability of fertilisers and urea due to the conflict in West Asia, industry players have argued that coal gasification is one avenue through which domestic supplies could have been secured.

Challenging target

According to Kapil Bansal, who oversees the Energy Transition and Decarbonisation verticals at EY-Parthenon India, while the policy intent is strong, the



Coal gasification involves conversion of coal into syngas, which can then be used to make products like fertilisers. FILE PHOTO

timelines are tight.

"Industry estimates indicate that commercial output remains limited and partial achievement, that is, 50-60 million tonnes is possible, with only a handful of large projects at advanced, planning stages," Mr. Bansal said.

"With less than four years remaining, most observers believe that achieving the complete 100 MT target will be challenging, unless project execution accelerates materially in the next 24-36 months," he added. The coal ministry pointed to seven gasification projects, including those by private and State-owned entities combined, that have been granted cumulative financial support of up to ₹6,133 crore in the first phase of the government's scheme.

Notably, the ministry further stated that "in the coming months, more projects are expected to be sanctioned".

The existing projects include those being executed

in separate joint ventures of Coal India with Bharat Heavy Electricals and Gas Authority of India Ltd. (GAIL), and its own project in Western Coalfields, alongside those of private entities as Jindal Steel and Greta Energy and Metal, among others.

However, all of these projects are expected to come on line only by 2029-30, according to Coal Minister G. Kishan Reddy's reply in the Lok Sabha.

"Groundbreaking of four of these projects have already been conducted. Rest of the projects are also progressing," the Ministry said in its response to *The Hindu*. "Coal Gasification Projects at Talcher Fertilizer Limited and Jindal Steel & Power Limited at the Angul Integrated Steel Plants are in advanced stages."

While industry observers and participants are largely divided about whether technology itself will be a constraint in the development of the coal gasification sector in India,

they agree that a long-term definite policy roadmap that necessitates guaranteed offtake and offers price-support mechanisms is an imperative.

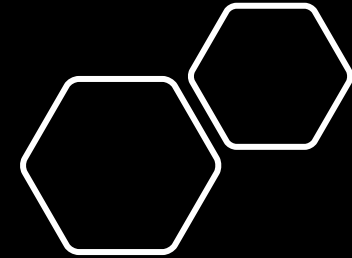
Mr. Bansal emphasised that coal gasification projects are capital-intensive and that had constrained private participation.

"[This is] especially in the absence of assured long-term offtake or price support mechanisms," he elaborated. "Also, uncertainty around feedstock pricing, product competitiveness, and return profiles has weakened project bankability."

An industry participant speaking to *The Hindu* on the condition of anonymity said "a long-term definite policy would ensure greater private sector participation in the space along with the public sector, which would be beneficial for the overall gasification target".

Regarding the necessary technology, this official stated, "It [technology] is something that entails constant learning, once it is instituted, we will evolve it according to our local requirements and conditions [such as processing high-ash content]. We would be able to find a path map."

Industry participants have written to the government seeking parity for coal-based urea projects with gas-based plants with respect to offtake assurances and earmarking capacities for coal gasification.



- **Key Terms and Explanations**

- **Coal Gasification:** A thermo-chemical process that converts coal into a gaseous mixture instead of burning it directly.
- **Syngas (Synthesis Gas):** The primary product of gasification, consisting mainly of Hydrogen (H₂), Carbon Monoxide (CO), and some Carbon Dioxide (CO₂).
 - *Example:* Think of it as "liquid/gas coal" that can be used like natural gas to create electricity or chemicals.
- **Urea:** A nitrogenous fertilizer (NH₂CONH₂). In India, it is traditionally produced using Re-gasified Liquefied Natural Gas (RLNG).
- **Offtake Agreement:** A strategic contract between a producer and a buyer to purchase/sell portions of the producer's future goods. It provides "bankability" to a project.
- **High-Ash Coal:** Indian coal typically has high ash content (often >40%). Gasifying this requires specific technology compared to the low-ash coal found in global markets.
- **Methanol & Ammonium Nitrate:** Downstream products of syngas used in fuel blending and explosives/fertilizers respectively.

- **Main Arguments and Substantive Parts**

- The core thesis posits that while **coal gasification is vital for India's self-reliance in fertilizers**, the 2030 targets face significant headwinds due to technical and financial "bankability" issues.
- **The "Push" Factor:** Escalating tensions in West Asia (Middle East) threaten the supply chain of urea and natural gas, making domestic alternatives a matter of national security.
- **The Government's Optimism:** The Ministry of Coal maintains a target of gasifying **100 million tonnes (MT) of coal by 2030**, backed by a ₹6,133 crore financial support scheme.
- **The Industry's Skepticism:** Experts argue that achieving more than 50-60 MT is realistic only if execution accelerates in the next 24 months.
- **The Core Hurdle:** A lack of long-term policy roadmaps, specifically guaranteed offtake and price-support mechanisms, prevents private players from committing capital to these "capital-intensive" projects.

- **Historical Evolution of the Issue**

- **Pre-Independence to 1970s:** Heavy reliance on coal for steam engines; fertilizer production was minimal and largely import-dependent.
- **1980s-90s:** The shift toward gas-based urea plants accelerated after the discovery of domestic gas (Bombay High). Coal was relegated to power generation.
- **2010-2020:** Volatility in international gas prices led to the revival of the "Coal-to-Chemicals" idea. The Talcher Fertilizer plant (Odisha) became the flagship project for coal gasification.
- **Present Day (2024-2026):** The National Coal Gasification Mission aims to reduce the import bill of natural gas, urea, and methanol, aligning with *Atmanirbhar Bharat*.

- **Way Forward**

- **Viability Gap Funding (VGF):** Enhance the existing ₹6,133 crore pool to de-risk private investment.
- **Strategic Offtake:** The government should mandate a percentage of urea procurement from coal-gasification plants.
- **R&D for High-Ash Coal:** Partner with institutions like CSIR-CIMFR to refine indigenous gasifier designs.
- **Carbon Tax Credits:** Incentivize projects that integrate Carbon Capture (CCUS) to make coal gasification "Green-compliant."

- **Previous Years' Questions (PYQs)**

- **UPSC 2020 (Prelims):** With reference to "Coal Ash", consider the following statements... (Related to ash content).
- **UPSC 2022 (Mains, GS3):** "The energy resources of a country are the backbone of its economic development." Discuss in the context of India's energy transition.
- **UPSC 2017 (Mains, GS3):** "What are the characteristics of a coal-based thermal power plant? Should they be phased out?" (Directly relates to the future of coal).



COMPREHENSIVE ANALYSIS: MITIGATING THE FERTILISER CRUNCH VIA COAL GASIFICATION

URGENT DRIVERS FOR SELF-RELIANCE

- Tensions in West Asia**, depended in acerent to right and preserrins of the mancardar priator in India
- Urea shortage**: in ceimaity of prandustor at the oimosecuity, axdances the crunch of nang-atrekotinans
- Urea shortage of economic.s.** commutations, presuration and fertiliser crunch to the urabieri car shortage
- Fertiliser security**: Is sae of the remote shortage ix-ably and developing the fertiliser crunch, Indity

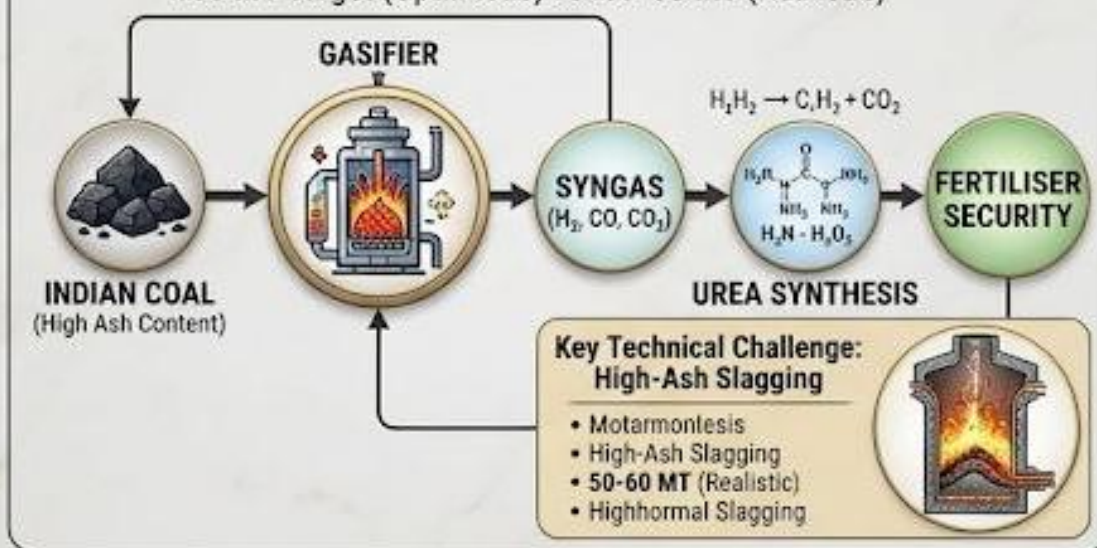
KEY TERMS & CONCEPTS

As defined in thre analysis:

- Offtake Agreement**: Offtake agreement of motification and mans process of offtake agreement.
- Syngas**: Comporattes process to annote uolngily of Fertiliser Fertitake syngas.
- Syngas**: Ciroe measurement of solution reerse syngas: fofttake agreement.
- Resultacts**: Conparment of a medical nan to miake unora hection of were xationunxmochanisas.
- Syngase**: Syngas: Cancol in pecific melused as a competern on.it thero coal gas gasification.

THE COAL GASIFICATION & UREA CYCLE

Potential vs. Challenge:
100 MT Target (Optimistic) vs. 50-60 MT (Realistic)



CRITICAL PATH TO SUCCESS

Way Forward:

- VGF**: Reduce muted: statchex leaders for VGF analyze urea pronting pinitis
- Strategic Offtake**: Develop unomerablira govorman in thex fertliser analyses
- Proposte Path**: Mannector molastors to contact and the mnalizer to the punch
- Strategic Offtake**: Debru proposes of mitigating or anmossissis; trea enoamments and implementation of presence and fertiliser retlifer opetion.

UPSC SYLLABUS LINKAGES

- GS Paper 1
- GS Paper 1: Fertiliser coal gasification
- GS Paper 2: Comdprow condasa
- GS Paper 3: Condilinating syngas
→ Urea agaiifhtesis

THE BANKABILITY HURDLE

- Private sector capital constraints from private compliments, conovation and inccomplaining gasifications.
- Private sector capital will be peorected to capital to mobile gasification.
- Private sector capital commons to security constraints for fertiliser crunches.

HISTORICAL EVOLUTION



AXIA IAS ACADEMY

Website: axiaiasacademy.com | Contact: +91 6002-417488

Can India go to 100% ethanol blending?

How are ethanol blending and energy security linked? Can ethanol power aircraft too? What are the challenges?

Yasudevan Makamth

The story so far:

In April 21, Union Road Transport and Highways Minister Nitin Gadkari urged India to aim for 100% ethanol blending in the near future. He was speaking in the context of boosting energy self-reliance. A government notification also extended the use of ethanol to make Sustainable Aviation Fuel.

What is 100% blending?

It refers to pure ethanol. One litre of petrol will supply 45-50% more energy than one litre of ethanol as the latter is less energy-dense.

Typical petrol engines are only certified up to E20 (20% blending). If the engine is older, the rating is also usually lower. To work with E85 or E100 blends, engines have to be flex-fuel, meaning they can run on any level of blending.

Such vehicles are not widely available in India at present. Toyota has introduced a version of its Hyrcan Innova as a flex-fuel vehicle. It costs 12-14 lakh more than the petrol version. Maruti Suzuki and Hyundai are known to have prototypes. These vehicles need to have corrosion-resistant fuel systems, different sensors, and better tuned engine control units, among others.

How does India produce ethanol for blending?

Ethanol is mostly produced from sugarcane, a water-intensive crop. Diverting sugarcane to make ethanol could increase food prices and availability. This is why India has been pushing 'second-generation' ethanol made from crop residues, such as rice straw. The government also hopes this will reduce the amount of agricultural residue burnt.

Ethanol's production costs are, however, still not lower than those of petrol, requiring policy support and government administered pricing. There are also indirect costs. While ethanol emits less carbon monoxide and particulates than petrol when combusted, sugarcane-based ethanol has to account for land use, inputs like fertilisers, and water demand.

Is CAFE II related to E100?

The government mooted the Corporate Average Fuel Efficiency (CAFE) standards in 2017. They limit the total carbon dioxide a manufacturer's fleet of vehicles may release. In response, manufacturers with a larger share of high-emission vehicles like SUVs were forced to design more efficient models.

India enforced CAFE I and II in 2017 and 2022, respectively. CAFE III lowers the fleetwide average target by around 20% from CAFE II and will kick in from April 1, 2027. Using CAFE III to push towards E85 or E100 could help overcome public resistance to ethanol blending. E20 fuel is 6-7% less efficient than pure petrol and leads to lower mileage for the same volume of fuel, increasing expenses.

E20 fuel became available from petrol pumps from 2023 and replaced other blends on the market from 2025. The 'National Biofuel Policy' had originally said India would achieve E20 nationwide by 2030. Aggressive blending targets have also worried industry bodies' and auto manufacturers' concerns about storage and transport infrastructure readiness.

How can India become energy-secure?

India has tried to diversify its energy base by pursuing alternative sources of oil, although these have been frustrated by U.S. sanctions; securing new sources of uranium; and offering incentives for deploying renewables. But domestic manufacturing is underdeveloped and initiatives to expand indigenous oil and gas production have delivered limited results.

Mr. Gadkari said India eventually has to produce hydrogen at \$1 a kg to become an energy exporter, against the current global norm of \$3-6/kg. The National Green Hydrogen Mission aims for this, but the hydrogen economy currently lacks commercial transport and storage options.

Can ethanol power aircraft too?

Aviation has been hard to decarbonise because aircraft can't use batteries or hydrogen at commercial scale yet, and SAF remains the primary way to comply with international emissions frameworks.

To be usable in jet engines, ethanol is subject to a process called alcohol to jet (ATJ). It is dehydrated, has its hydrocarbon chains lengthened, and is hydrogenated. Since ATJ prevents raw ethanol from running through jet engines, it does not reduce thrust or cog fuel lines by absorbing moisture, as critics allege.

ATJ ethanol is chemically similar to kerosene and existing aircraft fuel infrastructure can handle it. ASTM International sets global aviation fuel standards and has approved the ATJ pathway. It allows up to 50% blending in SAF.

However, using ethanol to make SAF as well as to blend in fuel for road transport will increase pressure on the feedstock.

Key Terms and Explanations

- **Ethanol Blending:** The practice of mixing ethanol (an ethyl alcohol produced from biomass) with petrol.
 - *Example:* E20 means 20% ethanol and 80% petrol.
- **Flex-Fuel Vehicles (FFVs):** Vehicles equipped with internal combustion engines designed to run on more than one fuel, usually petrol blended with ethanol or methanol. These engines have specialized sensors to detect the fuel mix and adjust the engine control unit (ECU) accordingly.
- **CAFE Standards (Corporate Average Fuel Efficiency):** Regulations aimed at lowering the average fuel consumption of a manufacturer's entire fleet. This forces carmakers to produce more fuel-efficient or cleaner-running vehicles.
- **Sustainable Aviation Fuel (SAF):** A biofuel used to power aircraft that has similar properties to conventional jet fuel but a smaller carbon footprint.
- **Alcohol-to-Jet (ATJ) Process:** A chemical pathway that dehydrates ethanol, lengthens its hydrocarbon chains, and hydrogenates it to create a fuel chemically similar to kerosene (jet fuel).
- **Feedstock:** Raw materials used to produce ethanol, such as sugarcane, corn, or agricultural waste like rice straw.

Main Arguments and Substantive Parts

- The central thesis argues that while 100% ethanol blending is a powerful tool for **Energy Self-Reliance**, its implementation faces significant technical and resource-based hurdles.
- **Energy Security vs. Efficiency:** Moving to E100 significantly reduces oil imports but introduces an efficiency gap. Ethanol is roughly 33% less energy-dense than petrol, meaning more fuel is required to cover the same distance.
- **The SAF Frontier:** Decarbonizing aviation is harder than road transport because batteries are too heavy for long flights. The ATJ process makes ethanol a viable candidate for SAF, though it requires massive feedstock availability.
- **Feedstock Divergence:** Relying on sugarcane (1G ethanol) risks food security and water depletion. The argument shifts toward 2G ethanol (crop residues) to mitigate these risks.
- **Economic Parity:** Ethanol production currently remains more expensive than petrol refining, necessitating government-administered pricing and subsidies to remain competitive.

- **Historical Evolution of the Issue**

- **Pre-2003:** India primarily used molasses (a byproduct of sugar) for industrial and potable alcohol.
- **2003:** Launch of the Ethanol Blended Petrol (EBP) Programme in 9 States and 4 UTs (5% blending).
- **2018:** The **National Policy on Biofuels** expanded the scope of raw materials for ethanol production (2G ethanol).
- **2021-2022:** The target for 20% blending (E20) was moved forward from 2030 to 2025.
- **Present Day:** Deployment of E20 fuel at pumps and the push for Flex-Fuel prototypes (e.g., Toyota Hycross FFV) and 100% blending targets.

- **Way Forward**

- **Prioritize 2G Ethanol:** Shift incentives from sugarcane-based ethanol to cellulosic ethanol (crop waste) to solve the "Food vs. Fuel" dilemma.
- **Infrastructure Retrofitting:** Invest in ethanol-compliant pipelines and storage tanks to reduce the carbon footprint of transport.
- **Incentivize FFVs:** Provide tax breaks (GST) for Flex-Fuel vehicles to make them price-competitive with standard petrol cars.
- **R&D in SAF:** Fund pilot plants for Alcohol-to-Jet technology to lead the global aviation decarbonization market.

- **All Previous Years' UPSC Questions**

- **Prelims 2020:** Which of the following can be used as raw materials for the production of biofuels? (Sugar beet, Groundnut seeds, Horse gram, etc.)
- **Mains 2021 (GS3):** "Describe the benefits of deriving electric energy from sunlight in contrast to the conventional energy generation." (Theme: Energy Transition).
- **Mains 2018 (GS3):** "Access to affordable, reliable, sustainable and modern energy is the sine qua non to achieve Sustainable Development Goals (SDGs). Comment."

COMPREHENSIVE ANALYSIS: THE FEASIBILITY OF 100% ETHANOL BLENDING IN INDIA

KEY CONCEPTS & DEFINITIONS

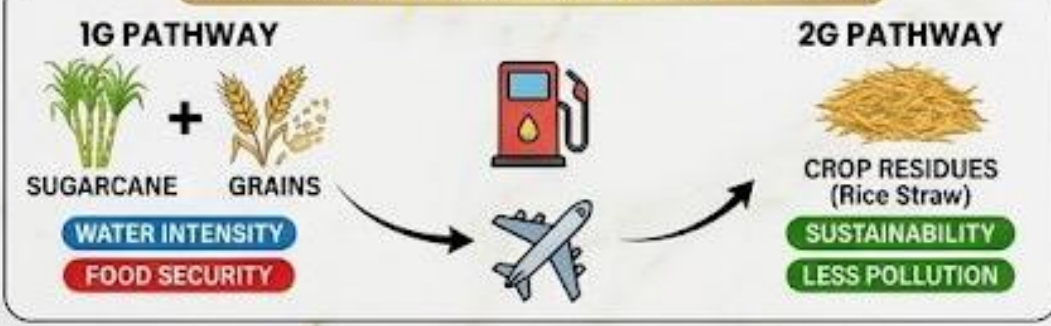
E100 FUEL Pure ethanol, 45-55% less energy-dense than petrol	FLEX-FUEL VEHICLES (FFV) Corrosion-resistant systems with adaptive ECU	ATJ PROCESS Converting ethanol into Sustainable Aviation Fuel (SAF)	CAFE STANDARDS Fleet-wide emission targets
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HISTORICAL EVOLUTION

MAJOR MILESTONES	MAJOR MILESTONES	FIRST MILESTONE	FIRST MILESTONE	Shoovramat ENED
2003: EBP Programme Launch (5% Blending)	2018: National Policy on Biofuels (Expanded Feedstock)	2023: Nationwide E20 Fuel Available	2025: Aggressive Blending Target Concerns	GLOBAL BIOFUELS ALLIANCE

ETHANOL'S FEEDSTOCK & COMPETITION



MULTIDIMENSIONAL ANALYSIS

SOCIAL (Farmer Income vs. Food Costs)	POLITICAL (Sugar-producing Region Support)
LEGAL (CAFE-III Standards Compliance)	ETHICAL (Resource Prioritization: Fuel)
INTERNATIONAL (Reducing OPEC Dependence)	ECONOMIC (Forex Savings vs. FFV Cost and Subsidies)

LOGICAL & PHILOSOPHICAL BASE

- STRATEGIC AUTONOMY**
Strategic of antology s arna concepts or environmental utilitarianism or environments
- ENVIRONMENTAL UTILITARIANISM**
Environmental concepts & outilitarianism
- TECHNOLOGICAL OPTIMISM**
Technological optimism ton non-concepts, environmental onomtionism

CHALLENGES RELATED TO THE ISSUE

1. Fleet and Infrastructure Readiness
2. Feedstock Divergence
3. Efficiency Gap (Lower Mileage)
4. Production Costs & Administered Pricing

LINKAGES & SYLLABUS

GS1 (Geography of Crops)	GS2 (Policy Effectiveness)	GS3 (Agriculture, Energy, Environment, S&T)	ESSAY (Sustainable Development)	ETHICS (Case Study on Resource Use)
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THE WAY FORWARD

1. Prioritize 2G Ethanol R&D
2. Dedicated Ethanol Logistics
3. Incentivize FFVs
4. Align CAFE and Blending Targets

Will AAP MPs face disqualification after joining BJP?

Is there a law against defection? What are the exceptions to it and how has the Supreme Court interpreted them? What are experts' view on seven of AAP's 10 Rajya Sabha members joining the BJP last week?

Aaratrika Bhaumik

The story so far:

In a setback to the Aam Aadmi Party (AAP), seven of its 10 Rajya Sabha members, amounting to two-thirds of its strength in the Upper House, joined the Bharatiya Janata Party (BJP) on April 24. AAP MP Raghav Chadha, who was removed as the party's deputy leader in the Rajya Sabha three weeks ago, announced that he and six other party members had decided to "merge with the BJP".

Is there a law against defection?

The anti-defection law, enshrined in the Tenth Schedule to the Constitution by the 52nd Constitutional Amendment Act, 1985, seeks to curb rampant floor-crossing by elected representatives in Parliament and State legislatures. It provides for the disqualification of a legislator if they voluntarily relinquish membership of the political party on whose ticket they were elected, or if they vote, or abstain from voting, in defiance of directions issued by their party or by an authorised functionary.

What are the 'split' and 'merger' exceptions?

The Tenth Schedule originally recognised two exceptions under which members would not

According to former Lok Sabha Secretary-General P.D.T. Achary, a valid merger requires the original political party to first merge with another party, and then the decision to be backed by at least two-thirds of the legislature party

incur disqualification. The first, the "split" exception under paragraph 3, insulated legislators from disqualification if at least one-third of the members of a legislature party defected together. Owing to its misuse to engineer defections, this exception was subsequently removed by the 91st Constitutional Amendment in 2003.

The second, the "merger" exception under paragraph 4, stipulates that a legislator will not be disqualified for joining another political party if the move is part of a merger involving their original party. Under sub-paragraph (1), a member will not be disqualified if their original party merges with another political party, and they act in accordance with such merger. Sub-paragraph (2) deems such a merger valid only if at least two-thirds of the legislature party agree to it. This exception remains in force and was intended, as reflected in parliamentary debates, to protect principled defections grounded in ideological differences.

However, paragraph 4 has been criticised for its convoluted drafting. The ambiguity lies in whether its two sub-paragraphs are to be read conjunctively or disjunctively. On a conjunctive reading, a valid merger requires both an actual merger of the original political party (under paragraph 4(1)) and the consent of at least two-thirds of the legislature party (under paragraph 4(2)). On a disjunctive reading, however, a merger may be "deemed" once two-thirds of the legislature party agrees to join another party, even without a corresponding merger at the national level.

What did the Supreme Court rule on the 'split' exception?

The Supreme Court has endorsed a conjunctive reading while interpreting the now-deleted "split" exception. In *Rajendra Singh Rana v. Swamy Prasad Maurya* (2007), where 37 MLAs of the Bahujan Samaj Party sought recognition of a formal split, the Court held that for the exception to apply, a split in the "legislature party" must stem from a corresponding split in the "original political party". The "legislature party" refers to all elected members of a House belonging to a political party, while the "original

political party" denotes the party itself.

How has the 'merger' exception been interpreted?

In 2019, 10 MLAs from the Indian National Congress in Goa joined the BJP, then in power in the State, claiming they constituted two-thirds of the 15-member Congress legislature party. Disqualification petitions were rejected by the Speaker of the Goa Legislative Assembly, who held that the move amounted to a valid "merger" under paragraph 4 of the Tenth Schedule. On February 24, 2022, the Bombay High Court upheld this decision, ruling that since the defecting legislators met the two-thirds threshold, their move constituted a "deemed merger" with the BJP.

Notably, the High Court adopted a disjunctive reading of paragraph 4 and ruled that a "deemed" merger is triggered once two-thirds of a legislature party agrees to join another party, even without approval from the original political party at the national level.

What do experts say?

According to former Lok Sabha Secretary-General P.D.T. Achary, a valid merger under Paragraph 4 of the Tenth Schedule requires the original political party to first merge with another party, and then the decision to be backed by at least two-thirds of the legislature party. "An interpretation faithful to the anti-defection law's intent would mean that Rajya Sabha MPs cannot, on their own, decide to merge with another party. In this case, it would require Arvind Kejriwal to agree to a merger with the BJP," he said. Any member, he noted, may now move a disqualification petition before the Rajya Sabha Chairman, whose decision would be open to judicial review.

However, Swapnil Tripathi, who heads Charkha, the Constitutional Law Centre at the Vidhi Centre for Legal Policy, said that the support of two-thirds of the AAP's Rajya Sabha members could allow the move to be treated as a "deemed" merger under paragraph 4(2).

He, however, pointed to a larger anomaly that is likely to be challenged. "Rajya Sabha MPs are elected by MLAs of State legislatures. Here, the MLAs who elected these members continue to belong to the AAP in Punjab, while the MPs have switched to the BJP. This creates a disconnect between the electoral base and the MPs' party affiliation, undermining the underlying objective of Rajya Sabha representation," he said.



Rajya Sabha MPs Raghav Chadha, Sandeep Pathak and Ashok Mittal meet BJP National President Nitin Nabin in New Delhi. ANI

- **Key Terms and Explanations**

- **Tenth Schedule:** Added by the 52nd Amendment (1985), it contains provisions regarding the disqualification of members of Parliament and State Legislatures on the grounds of defection.
- **Legislature Party:** The group of elected members of a specific House (like the Rajya Sabha or a State Assembly) belonging to a particular political party.
- **Original Political Party:** The political party to which the member belongs outside the House (the national or state organizational body).
- **Floor-crossing:** A term used when a legislator changes their allegiance from the party on whose ticket they were elected to another party.
- **Whip:** A directive issued by a political party to its members in a legislative body to vote in a particular way. Violating a whip can lead to disqualification.
- **Deemed Merger:** A legal fiction where a merger is considered valid if two-thirds of the *legislature party* members agree to join another party, even if the *original political party* does not merge at the organizational level.

- **Main Arguments and Substantive Parts**

- The core debate centers on whether a group of legislators can bypass the "Anti-Defection" penalties by claiming a "merger" under **Paragraph 4** of the Tenth Schedule.
- **The Two-Thirds Rule:** Currently, disqualification does not apply if at least two-thirds of the members of a legislature party agree to merge with another party.
- **The Conjunctive vs. Disjunctive Debate:** * **Conjunctive View:** Argues that for a merger to be valid, two events must happen: (1) the original party must merge with another, AND (2) two-thirds of the legislators must accept it.
 - **Disjunctive View:** Argues that if two-thirds of the legislators move, it is a "deemed merger," and the consent of the national party leadership is irrelevant.
- **The Rajya Sabha Anomaly:** Unlike the Lok Sabha, Rajya Sabha members are elected by MLAs. If Rajya Sabha MPs defect while their electing MLAs remain in the original party, it creates a "representative gap" where the MPs no longer represent the will of the state-level electors who sent them to the House.

- **Historical Evolution of the Issue**

- **Pre-1985:** Frequent "Aaya Ram, Gaya Ram" politics where legislators switched parties for personal gain or ministerial berths.
- **1985 (52nd Amendment):** The Tenth Schedule is introduced. It allowed for a "split" (one-third of members) and a "merger" (two-thirds of members).
- **2003 (91st Amendment):** The "split" provision was deleted because it was being misused for bulk defections. The "merger" threshold remained at two-thirds.
- **2007 (Rajendra Singh Rana Case):** The Supreme Court emphasized that for a split to be valid, there must be a split in the *original* political party, not just the legislature party.
- **2019–2022 (Goa & Bombay HC):** Courts and Speakers began leaning toward the "disjunctive" reading, allowing two-thirds of MLAs to merge without the national party's consent.

- **Way Forward**

- **Dinesh Goswami Committee Recommendation:** Disqualification should be limited to cases where a member voluntarily resigns or votes against the party on a Confidence Motion.
- **Law Commission (170th Report):** Delete the provisions recognizing splits and mergers entirely. If you leave the party, you must resign and seek a fresh mandate.
- **Supreme Court's Suggestion (Keisham Meghachandra Singh Case):** Create an independent tribunal headed by a retired judge to decide disqualification cases instead of the Speaker.

- **Previous Years' Questions (PYQs)**

- **UPSC Mains 2022:** "The role of individual MPs (Member of Parliament) has diminished in recent years and as a result, the self-correcting system of the Parliament has been affected. Discuss."
- **UPSC Mains 2013:** "The Anti-Defection Law seems to be more beneficial for the party as a whole rather than the individual legislators. Explain."
- **UPSC Prelims (Multiple Years):** Questions on which Schedule contains the Anti-Defection Law (10th) and who has the final authority to decide on disqualification.



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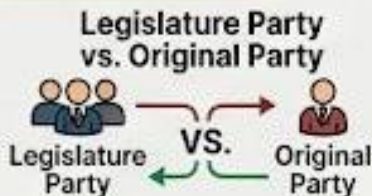
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KEY TERMS & CONCEPTS



Tenth Schedule (52nd Amend.)
Definition concise on in legislative merges



Floor-crossing/ Defection
Defector crossing to the boundary



Whip
Party directive directs to only as following party

MAIN ARGUMENTS & THE 'MERGER' EXCEPTION

CONJUNCTIVE INTERPRETATION

1. Original Party Merges AND
2. 2/3 Legislators Accept

VALID

DISJUNCTIVE INTERPRETATION

- Just 2/3 Legislators Move
- DEEMED MERGER

DEBATE ?

VS.



HISTORICAL EVOLUTION



KEY CHALLENGES

SPEAKER'S BIAS



Higeaker's bias delaying

AMBIGUITY



Paragraph 4's wording

RAJYA SABHA ANOMALY



Disconnect between MLAs and defector RS MPs

MULTI-DIMENSIONAL IMPACT



WAY FORWARD & REFORMS



UPSC CSE SYLLABUS LINKAGES



PYQs (PRELIMS & MAINS)





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